

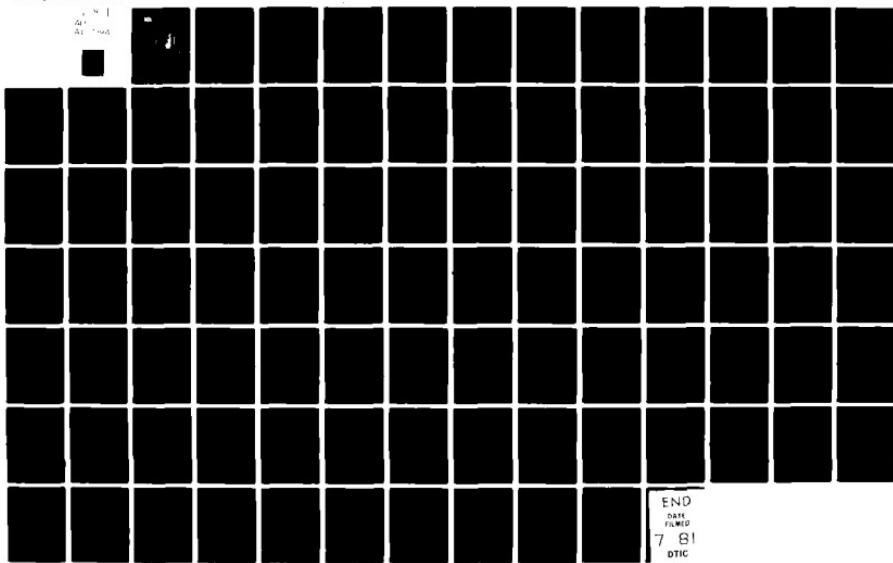
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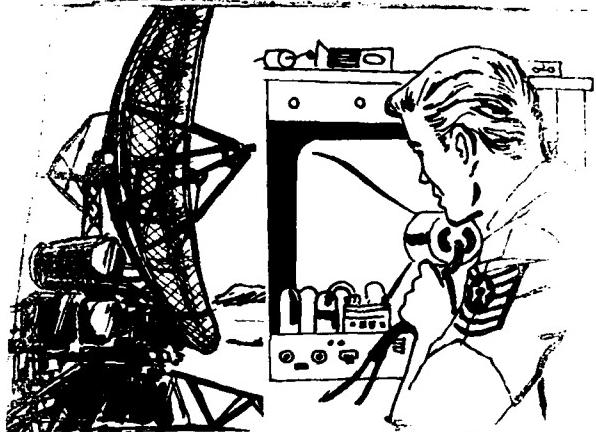
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UNITED STATES AIR FORCE

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OCCUPATIONAL SURVEY REPORT



AUTOMATIC TRACKING RADAR SPECIALTY

AFS-303X3, Volume 12,

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OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT CENTER
AIR TRAINING COMMAND
RANDOLPH AFB, TEXAS 78148

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PREFACE

This report presents the results of a detailed Air Force Occupational Survey of the Automatic Tracking Radar specialty (AFS 303X3). The project was directed by USAF Program Technical Training, Volume 2, dated June 1979. Authority for conducting occupational surveys is contained in AFR 35-2. Computer printouts from which this report was produced are available for use by operating and training officials.

The Air Force occupational survey program has been in existence since 1956, when initial research was undertaken by AFHRL (Air Force Systems Command) to develop a methodology for gathering and analyzing occupational information. In 1967, an operational occupational survey program was established within the Air Training Command and surveys were produced annually for 12 enlisted specialties. In 1972, the program was expanded to conduct occupational surveys covering 51 career fields annually. In late 1976, the program was again expanded to include the survey of officer utilization fields, to permit special management applications projects, and to support interservice or joint service occupational analysis.

The survey instrument used in the present project was developed by Chief Master Sergeant Robert Wing, Inventory Development Specialist. Captain Michael Hill, First Lieutenant Gordy Curphy, and Second Lieutenant John Tierney analyzed the survey data, and First Lieutenant Gordy Curphy wrote the final report. This report has been reviewed and approved by Lieutenant Colonel Jimmy L. Mitchell, Chief, Airman Career Ladders Analysis Section, Occupational Analysis Branch, USAF Occupational Measurement Center, Randolph AFB, Texas 78148.

Copies of this report are available to air staff sections, major commands, and other interested training and management personnel upon request to the USAF Occupational Measurement Center, attention to the Chief, Occupational Analysis Branch (OMY), Randolph AFB, Texas 78148.

This report has been reviewed and is approved.

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SUMMARY OF RESULTS

1. Survey Coverage: Inventory booklets were administered to Automatic Tracking Radar (AFSC 303X3) personnel worldwide. Survey results are based on the responses from 661 AFS 303X3 incumbents (57 percent of assigned). A majority of the incumbents surveyed were assigned to SAC and TAC.
2. Career Ladder Structure: DAFSC 303X3 personnel were found to be performing a wide variety of jobs. ATR Personnel, Operations Crew Members, Operations Maintenance Personnel, ATR Operators, and Operations Analysts are performing a job involving radar operations or maintenance functions, or a combination of the two. Job Control Personnel, Radar Maintenance Supervisors, Quality Control Personnel, ATR Workcenter Supervisors, and Resident Course Instructors are performing a job involving supervisory, training, or administrative functions.
3. Career Ladder Progression: Three-skill level personnel roughly divide their time performing radar operations and radar maintenance functions. DAFSC 30353 personnel spend approximately the same percentage of time performing radar maintenance, but spend less time performing operator functions and slightly more time performing supervisory functions. Seven-skill level personnel are first-line supervisors, and roughly divide their time performing supervisory and radar maintenance duties. DAFSC 30399 personnel are the middle level supervisors and managers of the career ladder, and spend almost all of their job time on supervisory duties.
4. TAFMS Groups: The typical trend of an increasing percentage of time spent on supervisory tasks with increasing months TAFMS was noted. A review of job satisfaction data revealed 303X3 first enlistment (1-48 months TAFMS), second enlistment (49-96 months TAFMS), and career (97+ months TAFMS) personnel are about equally satisfied with their job as the personnel in other related career ladders. In addition, an examination of the tasks typically performed by first enlistment personnel reveals these incumbents roughly divide their job time between radar operations and maintenance tasks.
5. Analysis of CONUS Versus Overseas Groups: Overall, the jobs performed by these two DAFSC 30353 groups were fairly similar. However, a higher percentage of CONUS respondents were found to be performing RBS and ECM type tasks.
6. Major Command Comparison: AFCC incumbents were differentiated by the range and angle tracking and computer system maintenance tasks they performed. SAC personnel were differentiated by the RBS and ECM tasks they performed. Tasks involving radar installation and removal functions were performed by high percentages of PACAF personnel. ATC incumbents were found to be performing primarily training tasks.
7. Training Analysis: The 3-, 5-, 7-, and 9-skill level AFR 39-1 specialty descriptions were found to provide a clear overview of the 303X3 career ladder. The STS, dated April 1978, appears comprehensive. The POI for the basic resident course (3ABR30333) appears to provide comprehensive training for first enlistment personnel, and all criterion objectives were supported by occupational survey data.

8. Implications: The 303X3 career ladder is fairly heterogeneous, with a wide variety of jobs performed by Automatic Tracking Radar personnel. Several of the jobs identified involved radar operators, and an important issue concerning this career ladder is the possible elimination of these operator-oriented jobs. These jobs could instead be performed by personnel from an operator AFSC (such as 276X0 or 276X2). This could be beneficial to the Air Force since all 303X3 personnel would then become maintainers, which would probably be a better utilization of their training and of manpower in general. This restructuring could also help to increase the overall experience level of the 303X3 specialty, by possibly increasing the reenlistment intentions of 303X3 first enlistment personnel.

OCCUPATIONAL SURVEY REPORT
AUTOMATIC TRACKING RADAR SPECIALTY
(AFS 303X3)

INTRODUCTION

This is a report of an occupational survey of the Automatic Tracking Radar (AFS 303X3) specialty, completed by the Occupational Analysis Branch, USAF Occupational Measurement Center, in February 1981. The survey was initiated at the request of the Air Force Manpower and Personnel Center Classification Branch (AFMPC/MPCRPQ) in order to determine the feasibility of merging three radar maintenance specialties (AFSs 303X1, 303X2, and 303X3) into a common specialty. In order to properly address this issue, the personnel in all three specialties were surveyed using a common job inventory. The feasibility of merging the three specialties and other types of analyses across the three career ladders is presented in a combined report (AFPT 90-303-400, Volume I). This report concentrates primarily on the results relating to the Automatic Tracking Radar (AFS 303X3) specialty. Detailed results of the Air Traffic Control Radar (AFS 303X1) and Aircraft Control and Warning Radar (AFS 303X2) specialties are provided in two separate reports (AFPT 90-303-400, Volumes II and III).

Background

As outlined in the current AFR 39-1 Specialty Descriptions, Automatic Tracking Radar personnel are responsible for installing, maintaining, and repairing automatic tracking systems, acquisition systems, related electronic warfare equipment, and associated identification equipment. These personnel are also responsible for operating automatic tracking systems during radar bomb scoring and ground directed bombing operations.

Historically, the 303X3 career ladder was first established in 1953 and has undergone several changes since that time. The chart below depicts the changes that have occurred in this specialty since 1953:

1953

303X3 first created

1954

303X3A (Automatic Tracking Radar Specialist, Systems Equipment)
303X3B (Automatic Tracking Radar Specialist, SHORAN Equipment)

1960

303X3A (Automated Tracking Radar Specialist, Automatic Tracking Radar Equipment)
303X3B shred deleted
303X3C (Automated Tracking Radar Specialist, Rate and Track Subsystems)
30390 first created Ground Radar Superintendent

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1965

303X3A shred deleted

1966

303X3C shred deleted

1970

30390 changed to 30393 (title remains unchanged)

1979

30393 changed to 30399 (title remains unchanged)

1980

303X3 (Automatic Tracking Radar Specialist/Technician)

30399 (Ground Radar Superintendent)

Formal training for personnel desiring to enter the 303X3 specialty is available at Keesler AFB MS. This is a 109-day course in which future Automatic Tracking Radar Specialists are oriented in such areas as: radar principles, aircraft plotting, angle and range tracking techniques, and preventive maintenance techniques. Upon completion of this course, graduates are awarded a 3-skill level and are assigned to various units worldwide.

Objectives

This report will primarily examine the Automatic Tracking Radar specialty (AFS 303X3) on the basis of the tasks performed by the survey respondents. However, it is important to note that the survey instrument utilized for this report was a combined 303X1, 303X2, and 303X3 survey. The results of the AFS 303X1, AFS 303X2, and joint 303X1, 303X2 and 303X3 analyses are presented in three separate reports (AFPT 90-303-400, Volumes I, II, and III). It is highly recommended that users of this report also examine the other three reports in order to better assess the 303X3 specialty.

Topics discussed in this report include: (1) development and administration of the survey instrument; (2) the jobs performed by 303X3 personnel; (3) CONUS versus overseas differences; (4) comparisons of the job structure to current AFR 39-1 Specialty Descriptions, the Specialty Training Standard (STS), and Plan of Instruction (POI); and (5) job satisfaction and other related background data.

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory AFPT 90-303-400. As a starting point, the tasks listed in the 1977 303X1, the 1978 303X2, and the 1977 303X3 job inventories were reviewed for currency by the Inventory Development Specialist and two Instructors from each specialty at Keesler AFB MS. They then reviewed all pertinent career ladder publications and directives for additional radar related tasks. This tentative task list was then reviewed for completeness and accuracy by 303X1, 303X2, and 303X3 personnel at Nellis AFB NV, Tinker AFB OK, Peterson AFB CO, and LaJunta AFS CO. The resulting task list was reviewed again by 303X1, 303X2, and 303X3 Keesler Technical Training Instructors in a face to face encounter to ensure the tasks were representative of the jobs performed by 303X1, 303X2, and 303X3 personnel. This encounter helped to insure that the skills and knowledges needed to perform a task were the same, regardless of the equipment associated with the task. For example, wiring diagrams of radar equipment using klystrons were presented during the encounter, and the Training Instructors debated on whether the skills and knowledges need to isolate malfunctions on one type of equipment was essentially the same as for the other types of equipment. If the skills and knowledges were similar, then only one task was written, such as "isolate diplexer malfunctions". If the skills and knowledges differed to some degree, then a number of more equipment specific tasks were written, such as "isolate klystron malfunctions in search radars." Another example of this type of commonality discussion centered around components of various systems. In this study there was a consensus that most components removed or replaced required the same skill no matter what system they were located in. For example, the task "remove or replace duplexers" indicates that the skill is the same no matter what equipment it is located in.

This process resulted in a final job inventory of 1,324 tasks grouped under 20 duty headings. In addition, a background section which included information about each respondent, such as grade, Total Active Federal Military Service (TAFMS), duty title, job interest, and the type of radar system maintained or operated is included in the final inventory.

Job Inventory Administration

During the period May through September 1980, Consolidated Base Personnel Offices in operational units worldwide administered the inventory to all job incumbents holding a DAFSC of 303X1, 303X2, 303X3, or 30399. These job incumbents were identified using AFMPC personnel data tapes available through the Air Force Human Resources Laboratory (AFHRL).

Each individual who filled out an inventory first completed an identification and biographical information section and then checked each task performed in their current job. After checking all tasks performed, each member then rated each of these tasks on a nine-point scale showing relative time spent on the task as compared to all other tasks checked. The ratings ranged from one (very small amount of time spent) through five (about average time spent) to nine (very large amount of time spent).

To determine relative time spent for each task checked by a respondent, all of an incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task is then divided by the total task ratings and multiplied by 100. This procedure provides a basis for comparing tasks in terms of both percent members performing and relative percent time spent.

Task Factor Administration

In addition to completing the job inventory, selected senior 303X3 personnel were also asked to complete a second booklet for task difficulty. The task difficulty booklets are processed separately from the job inventories. This information is used in a number of different analyses discussed in more detail within the report.

Task Difficulty. Each senior NCO completing a task difficulty booklet was asked to rate all of the tasks on a nine-point scale from extremely low to extremely high as to the relative difficulty of that task. Difficulty is defined as the length of time it requires an average member to learn to do that task. Task difficulty data was independently solicited from experienced 7- or 9-skill level personnel stationed worldwide in each specialty. The interrater reliability (as assessed through components of variance of standard group means) for the 38 DAFSC 303X3 raters who returned booklets was .92 which suggests very high agreement. Ratings were then adjusted so that tasks of average difficulty have ratings of 5.0. The resulting data is a rank ordering of tasks indicating a degree of difficulty for each task in the inventory.

Job Difficulty Index. After computing the task difficulty index for each item, it is then possible to compute a Job Difficulty Index (JDI) for the job groups identified in the survey analysis. This index provides a relative measure of which jobs, when compared to other jobs identified, are more or less difficult. An equation using the number of tasks performed and the average difficulty per unit time spent as variables are the basis for the JDI. This index ranges from one for very easy jobs to 25 for very difficult jobs. The data are adjusted so that the average job difficulty index is 13.00. Thus, the more time a group spends performing difficult tasks, and the more tasks they perform, the higher will be their job difficulty index. The JDI ratings for the 303X3 career ladder can be found in the CAREER LADDER STRUCTURE and Appendix A of this report.

When used in conjunction with other factors, such as percent members performing, the task difficulty ratings can provide insight into the training requirements of the specialty. This may help validate the lengthening or shortening of specific units of instruction to refine various training programs.

Survey Sample

Personnel were selected to participate in this survey so as to ensure an accurate representation across all MAJCOM and paygrade groups. In this study, all incumbents with a 303X3 DAFSC were solicited for their responses. Table 1 reflects the major command distribution of personnel assigned to the 303X3 career ladder as of the Fall of 1980. Table 2 reflects the percentage distribution by paygrade. Table 3 reflects the distribution of the survey sample in terms of TAFMS groups. Overall, a representative sample was obtained, with 661 of the 1,161 respondents (57 percent) assigned to this career ladder sampled.

TABLE 1
COMMAND DISTRIBUTION OF SURVEY SAMPLE

<u>MAJOR COMMAND</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
SAC	50	53
TAC	28	33
PACAF	4	4
ATC	3	3
AFSC	3	3
USAFE	2	1
AFCC	1	2
AAC	1	-
OTHER	8	1
TOTAL	100	100

TOTAL 303X3 ASSIGNED - 1,161
TOTAL 303X3 SAMPLED - 661
PERCENT OF 303X3 IN SAMPLE - 57%

TABLE 2
PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

<u>PAYGRADE</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
AIRMAN	31	28
E-4	31	31
E-5	22	23
E-6	10	11
E-7	6	7
E-8	*	*
TOTAL	100	100

* DENOTES LESS THAN ONE PERCENT

TABLE 3
TAFMS DISTRIBUTION OF SURVEY SAMPLE

	MONTHS TIME IN SERVICE			
	<u>1-48</u>	<u>49-96</u>	<u>97+</u>	<u>TOTAL</u>
NUMBER OF AFS 303X3 SAMPLE	324	143	194	661
PERCENT OF AFS 303X3 SAMPLE	49%	22%	29%	100%

Data Processing and Analysis

Once job inventories are returned from the field, they are prepared so that task responses and background information can be optically scanned. Other biographical information (such as name, base, autovon extension) is keypunched onto disks and entered directly into the computer. Once both sets of data are in the computer, they are merged to form a complete case record for each respondent. Computer generated programs using Comprehensive Occupational Data Analysis Programs (CODAP) techniques were then applied to the data.

CODAP produces job descriptions for respondents based on their responses to specific inventory tasks. Computer generated job descriptions are available for DAFSC groups, TAFMS groups, and MAJCOM groups, and include such information as percent members performing each task, the average percent time spent performing each task, the percent members utilizing various pieces of equipment, and the cumulative average percent time spent by all members for each task in the inventory.

CAREER LADDER STRUCTURE

The structure of jobs within the Automatic Tracking Radar career ladder was examined on the basis of similarity of tasks performed and the percent of time spent ratings provided by job incumbents, independent of specialty or other background factors.

For the purpose of organizing individual jobs into similar units of work, an automated job clustering program is used. This hierarchical grouping program is a basic part of the Comprehensive Occupational Data Analysis Program (CODAP) system for job analysis. Each individual job description in the sample is compared to every other job description in terms of tasks performed and the relative amount of time spent on each task in the job inventory. The automated system is designed to locate the two job descriptions with the most similar tasks and percent time ratings and combine them to form a composite job description. In successive stages, new members are added to initial groups or new groups are formed based on the similarity of tasks and percent of time ratings in each individual job description. This procedure is continued until all individual and groups are combined to form a single composite representing the total sample. The resulting analysis of the variety of groups of jobs serves to identify: (1) the number and characteristics of the different jobs which exist within the career ladders; (2) the tasks which tend to be performed together by the same respondents; and (3) the breadth or narrowness of the jobs which exist within the Automatic Tracking Radar career ladder.

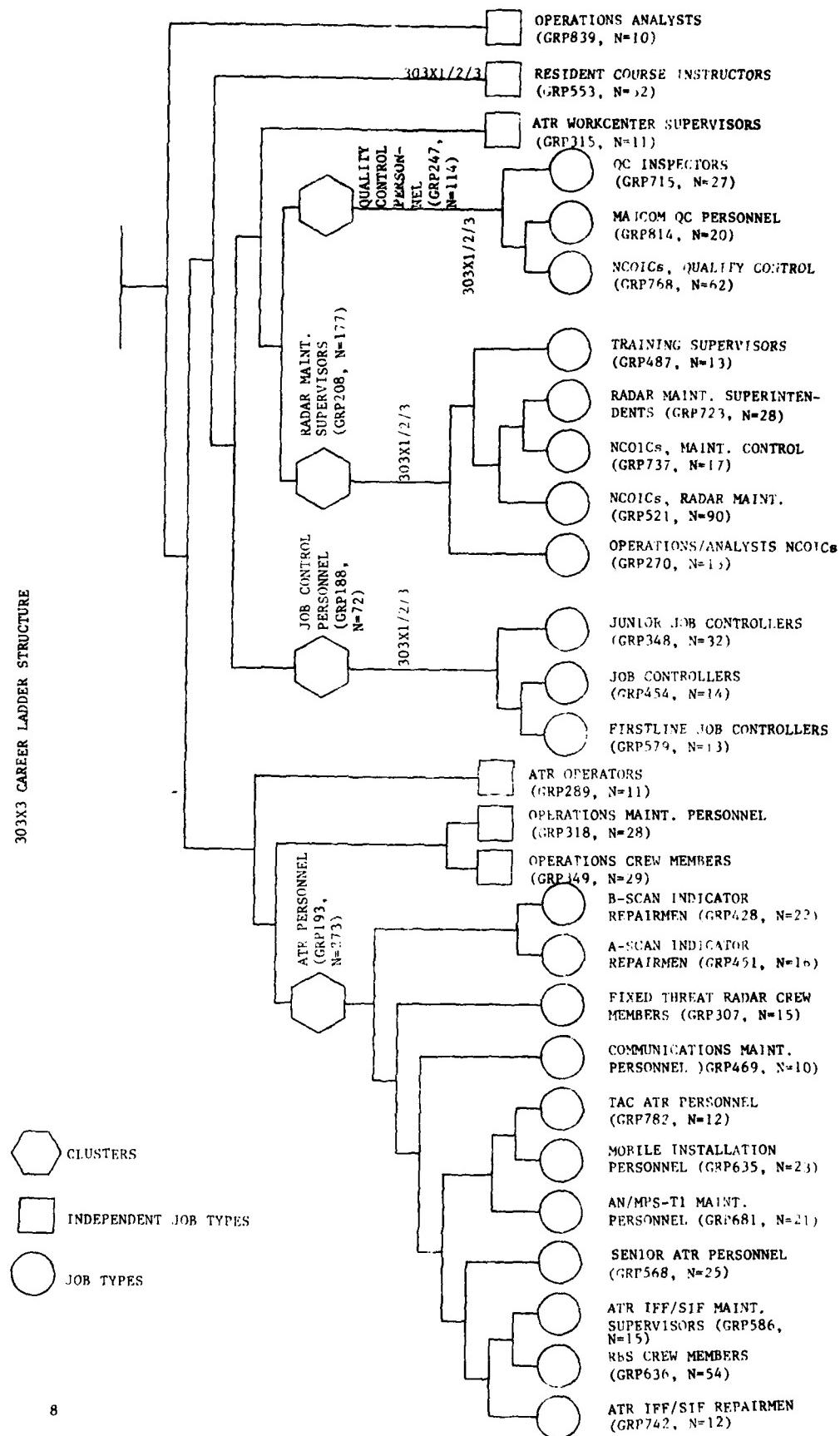
The basic identifying group used in the hierarchical job structuring process is the Job Type. A job type is a group of individuals who perform many of the same tasks and spend similar amounts of time performing them. When there is a substantial degree of similarity between different job types, they are grouped together and labeled as Clusters. In many career fields, there are specialized job types that are too dissimilar to be grouped into any cluster. These unique groups are labeled Independent Job Types.

The jobs performed by Automatic Tracking Radar career ladder incumbents are illustrated in Figure 1. Based on the similarity of tasks performed and the amount of time spent performing each task, four clusters and six independent job types were identified. These clusters and independent job types are on the following pages:

I. AUTOMATIC TRACKING RADAR (ATR) PERSONNEL (GRP193, N=273)

- a. ATR IFF/SIF Repairmen (GRP742, N=12)
- b. Radar Bomb Scoring (RBS) Crew Members (GRP636, N=54)
- c. ATR IFF/SIF Maintenance Supervisors (GRP586, N=15)
- d. Senior ATR Personnel (GRP568, N=25)
- e. AN/MPS-T1 Maintenance Personnel (GRP681, N=21)
- f. Mobile Installation Personnel (GRP635, N=23)
- g. TAC ATR Personnel (GRP782, N=12)
- h. Communications Maintenance Personnel (GRP469, N=10)
- i. Fixed Threat Radar Crew Members (GRP307, N=15)
- j. A-Scan Indicator Repairmen (GRP451, N=16)
- k. B-Scan Indicator Repairmen (GRP428, N=22)

FIGURE 1
303X3 CAREER LADDER STRUCTURE



- II. OPERATIONS CREW MEMBERS (GRP349, N=29)
- III. OPERATIONS MAINTENANCE PERSONNEL (GRP318, N=28)
- IV. AUTOMATIC TRACKING RADAR OPERATORS (GRP289, N=11)
- V. JOB CONTROL PERSONNEL (GRP188, N=72)
 - a. Firstline Job Controllers (GRP579, N=13)
 - b. Job Controllers (GRP454, N=14)
 - c. Junior Job Controllers (GRP348, N=32)
- VI. RADAR MAINTENANCE SUPERVISORS (GRP208, N=177)
 - a. Operations/Analysis NCOICs (GRP270, N=13)
 - b. NCOICs, Radar Maintenance (GRP521, N=90)
 - c. NCOICs, Maintenance Control (GRP737, N=17)
 - d. Radar Maintenance Superintendents (GRP723, N=28)
 - e. Training Supervisors (GRP487, N=13)
- VII. QUALITY CONTROL PERSONNEL (GRP247, N=114)
 - a. NCOICs, Quality Control (GRP768, N=62)
 - b. MAJCOM Quality Control Personnel (GRP814, N=20)
 - c. Quality Control Inspectors (GRP715, N=27)
- VIII. AUTOMATIC TRACKING RADAR WORKCENTER SUPERVISORS (GRP315, N=11)
- IX. RESIDENT COURSE INSTRUCTORS (GRP553, N=52)
- X. OPERATIONS ANALYSTS (GRP839, N=10)

The 303X3 respondents forming these job types and clusters account for 71 percent of the 303X3 survey sample. The remaining 29 percent did not group with any of the clusters of job types described above. Some of the job titles held by the remaining 29 percent were: AN/TLQ-11 Supervisor, RBS Recorder, Automatic Tracking Radar Specialist, EW Scorer, Board Operator, Flight Test Missile Coordinator/Controller, Instructor, Plotter, Operations Analyst, and Radar Repairman. These personnel did not group with any cluster or job type because of either the unique job they performed or in the manner in which they perceived their job.

Overview

Generally, the career ladder is fairly heterogeneous, with a wide variety of jobs being performed by 303X3 personnel. DAFSC 303X3 personnel can be found performing primarily radar maintenance, radar operations, supervision, administration, or training, or in some jobs combinations of these functions, depending on the major job group discussed. However, maintenance or operations functions seem to be the primary responsibility for a majority of the 303X3 personnel surveyed.

Brief descriptions of each cluster and independent job type are presented below. In addition, there are three tables at the end of this section that provide additional information about the clusters and independent job types. Table 4 provides the relative percent time spent on each duty by the personnel in each of the groups identified. For example, Operations Crew Members spend 80 percent of their job time performing operations functions, while Job Control Personnel spend 47 percent of their time on administration of supply functions. Table 5 provides selected background information, such as DAFSC, MAJCOM, or type of radar equipment maintained. For example, Operations Analysts perform an average of 15 tasks and 70 percent hold the 5-skill level. Table 6 provides job satisfaction data for each major job group. These data suggest that the personnel in the Operations Crew Members, Operations Maintenance Personnel, Job Control Personnel, and Operations Analysts major job groups are fairly dissatisfied with their job, with relatively low percentages of these personnel finding their job interesting or planning to reenlist.

Also included in this report are two appendices concerning the Automatic Tracking Radar career ladder structure. Appendix A provides various duty, background, and job satisfaction information about the job types identified within each of the clusters found in the Automatic Tracking Radar career ladder, in addition to a brief job description for each of the job types identified. Appendix B lists common tasks performed by members for each of the clusters and independent job types identified in this section.

I. AUTOMATIC TRACKING RADAR PERSONNEL (GRP193). Seventy-four percent of the 273 respondents in this cluster hold the 5-skill level, and 60 percent are in their first enlistment. This major job group is the largest identified, and in addition, these incumbents also perform the highest average number of tasks (186). Respondents in this cluster are primarily maintenance oriented, but also spend substantial amounts of job time performing radar operator type duties. These personnel are responsible for operating and maintaining various types of ATRs and associated equipment, such as the AN/MPS-T1, AN/MSQ-77, AN/MPS-9 or AN/MPS-2 radars. Typical tasks performed by these respondents include:

- perform transmitter runup procedures
- perform PMIs on antenna equipment
- interpret plans, diagrams, or schematics
- remove or replace resistors
- perform aircraft automatic tracking procedures
- perform corrosion control on antenna pedestals or towers

Eighty-six percent of these personnel are assigned to SAC or TAC, and 85 percent are assigned to CONUS. Job satisfaction indicators are relatively good for these personnel, with 78 percent perceiving their talents are utilized fairly well and 79 percent believe their training is being utilized at least fairly well.

II. OPERATIONS CREW MEMBERS (GRP349). The 29 respondents found in this independent job type are differentiated from most other major job groups due to the large amount of job time (80 percent) they spend performing operations functions. These incumbents are all assigned to SAC, and are

primarily responsible for operating the ATRs used for strategic radar bomb scoring (RBS) and electronic warfare (EW) type missions. However, it must be noted that these incumbents do spend some time performing ATR maintenance, but the focus of their job is in operations, with typical tasks including:

- record bomb away times
- operate plotting boards
- measure circular errors or azimuths
- perform RBS mission run scoring
- confirm ECM scores
- compute ballistics information

This major job group is somewhat similar to the one described earlier, in the fact that first enlistment personnel also make up a majority (62 percent) of the incumbents identified in this major job group. However, job satisfaction data varies between the two groups, with substantially fewer Operations Crew Members finding their job interesting (41 percent) or perceiving their job utilizes their talents at least fairly well (also 41 percent) than ATR Personnel.

III. OPERATIONS MAINTENANCE PERSONNEL (GRP318). All of the 28 personnel in this independent job type are assigned to SAC, and 97 percent hold the 3- or 5-skill level. These incumbents spend half their time operating and the remainder of their job time maintaining the AN/MSQ-77 radar system. This system is used for evaluating SAC RBS and EW missions, and typical maintenance and operator type tasks performed by these incumbents include:

- record bomb away times
- perform PMIs on computer equipment
- perform PMIs on receiver equipment
- perform transmitter runup procedures
- perform PMIs on antenna equipment
- measure aircraft tracks

These incumbents perform a rather high average number of tasks (105), and 68 percent are in their first enlistment. Job satisfaction data reveals these incumbents are somewhat dissatisfied with their job, with only 54 percent finding their job interesting and only 46 percent perceiving their talents are being utilized at least fairly well.

IV. AUTOMATIC TRACKING RADAR OPERATORS (GRP289). All of the 11 incumbents in this major job group are assigned to TAC, and 91 percent hold the 3-skill level. All of these incumbents operate and maintain the AN/MPS-T1 radar/training sets, many of which are located at Nellis AFB NV. Most of these respondents are responsible for providing tactical EW threats in support of the tactical missions flown out of Nellis AFB. Typical tasks performed by these respondents include:

- operate manual tracker azimuth or elevation controls
- operate manual tracker range controls
- perform PMIs on vans or trailers
- adjust B-scan indicators
- perform PMIs on antenna equipment
- perform aircraft automatic tracking procedures

This is the most junior of all the major job groups identified, averaging only 20 months TAFMS and 91 percent are still in their first enlistment. A review of job satisfaction data reveals mixed findings, with 64 percent finding their job interesting but only 36 percent plan to reenlist.

V. JOB CONTROL PERSONNEL (GRPI88). This cluster of 72 personnel has three job types and is composed of personnel from the 303X1, 303X2, and 303X3 career ladders. These incumbents spend 47 percent of their job time performing administrative and supply functions, which is more time than all other major job groups. The DAFSC 303X3 personnel in this cluster are responsible for performing the job control and related functions for automatic tracking radars and associated equipment. Typical tasks performed by these incumbents include:

- prepare job/status document forms (AF Form 264)
- issue job control numbers
- maintain status boards, graphs, or charts
- maintain equipment status reports
- document equipment cannibalization
- prepare briefings

These incumbents perform a fairly narrow job, performing only an average of 17 tasks. Personnel in this cluster have slightly more than average TAFMS (102 months) and 89 percent are stationed in CONUS. Job satisfaction data reveals the personnel in this major job group are among the most dissatisfied, with only 51 percent finding their job interesting and only 25 percent perceiving their training is being utilized at least fairly well.

VI. RADAR MAINTENANCE SUPERVISORS (GRP208). These 177 incumbents hold DAFSC 303X1, 303X2, or 303X3 and spend 74 percent of their job time performing supervisory duties. The 303X3 personnel identified in this major job group are the supervisors and managers of the 303X3 career ladder. As expected these respondents spend very little time performing technical radar maintenance tasks, and tend to focus on performing supervisory tasks, such as:

- interpret policies, directives, or procedures for subordinates
- prepare APRs
- counsel personnel on personal or military related matters
- determine work priorities
- plan work assignments
- maintain training records, charts, or graphs

These incumbents are the most senior of all major job groups, averaging 211 months TAFMS and with 54 percent holding DAFSC 30373 or 30399. These respondents supervise an average of five personnel, and 38 percent are assigned TAC. Job satisfaction data is good, with 71 percent of these respondents finding their job interesting and perceiving training is being utilized at least fairly well.

VII. QUALITY CONTROL PERSONNEL (GRP247). Like the two clusters described above, the personnel in this major job group are performing very little, if any, radar maintenance and hold either the 303X1, 303X2, or 303X3 DAFSC. These incumbents spend a majority of their job time performing supervisory duties, of which inspecting and evaluating tasks comprise 49 percent of their total job time. The DAFSC 303X3 incumbents in this cluster are responsible for the quality assurance and quality control programs associated with the various ATC radar systems. Typical tasks performed by these incumbents include:

- perform equipment inspections
- prepare inspection reports
- perform personnel proficiency evaluations
- evaluate compliance with performance standards
- evaluate maintenance procedures
- perform deficiency analysis

These incumbents are also fairly senior, averaging 193 months TAFMS and having an average paygrade of E-6. In addition, job satisfaction data reveals 40 percent of these incumbents plan to retire instead of reenlist, which is the highest retirement percentage of all major job groups identified.

VIII. AUTOMATIC TRACKING RADAR WORKCENTER SUPERVISORS (GRP315). Almost all of these incumbents are working at Nellis AFB NV, and 91 percent hold the 7- or 9-skill level. These incumbents spend substantial amounts of job time performing supervisory, operations, and maintenance type tasks. The 11 personnel identified in this independent job type supervise an average of six personnel, and seem to be the firstline supervisors at various ATR work centers. A vast majority (73 percent) of these respondents are involved with maintaining the AN/MPS-T1 radar/training set, and typical tasks performed by these incumbents include:

- supervise Automatic Tracking Radar Specialists (AFSC 30353)
- conduct OJT
- perform soldering on circuit boards
- perform system run down procedures
- operate manual tracker azimuth or elevation controls

These incumbents perform a relatively high average number of tasks (101) and average 100 months TAFMS. A review of job satisfaction data indicates these personnel are among the most satisfied of all major job groups, with 73 percent finding their job interesting and 82 percent perceiving their training is being utilized at least fairly well.

IX. RESIDENT COURSE INSTRUCTORS (GRP553). This independent job type of 52 personnel is responsible for conducting resident course classroom training. As with several of the major job groups discussed earlier, this job group is composed of personnel from all three radar maintenance career ladders, with those personnel holding DAFSC T303X3 responsible for conducting various 303X3 resident classroom courses. All of the incumbents in this cluster are located in Keesler AFB MS, and spend an average of 81 percent of their job time performing training type tasks such as:

- conduct resident course classroom training
- prepare lesson plans
- score tests
- evaluate progress of resident course students
- develop training aids
- conduct safety training

As expected, all of these incumbents are assigned to Air Training Command and a low percentage are in their first enlistment (27 percent). These incumbents are the most satisfied overall of all major job groups, with 86 percent finding their job interesting and 92 percent perceiving their talents are being utilized at least fairly well.

X. OPERATIONS ANALYSTS (GRP839). All of the 10 incumbents identified in this independent job type are assigned to SAC, and all hold the 3- or 5-skill level. These personnel are differentiated due to the large percentage of time spent (85 percent) performing operator functions and by the low average number of tasks they perform (15). These respondents are responsible for operating the ATR systems used to provide SAC bomber crews with RBS and ECM mission results. Typical tasks performed by these personnel include:

- measure ground speed
- measure aircraft tracks
- confirm RBS scores
- measure circular errors or azimuths
- compute ballistics information
- measure autorange or autoangles

Due to the relative ease of the tasks performed and the low average number of tasks, it is not surprising to note that these incumbents have the lowest JDI (4.1) of all major job groups. The fact that this job is unchallenging may also be reflected in the job satisfaction data for these respondents, with only 40 percent finding their job interesting and only 50 percent perceiving their talents are being utilized at least fairly well.

Summary

Overall, a wide variety of jobs are performed by 303X3 personnel. These jobs range from primarily maintenance oriented (ATR Personnel) to primarily operations oriented (Operations Analysts) and also includes supervisory type personnel (Radar Maintenance Supervisors). Also, in some major job groups combinations of functions were identified, such as Operations

Maintenance Personnel who spend roughly half of their job time performing maintenance or operations functions, or ATR Workcenter Supervisors, who spend time performing maintenance, operations, and supervisory type duties.

Finally, it must be noted that high percentages of DAFSC 303X1 and 303X2 personnel were noted in several of the major job groups identified. However, none of the technical jobs performed by 303X3 personnel involving ATR maintenance or operations were performed by substantial percentages of DAFSC 303X1 or 303X2 personnel. Only those jobs in which the focus was on administration, supervision, or training were substantial percentages of the personnel of all three career ladders identified.

TABLE 4
RELATIVE PERCENT TIME SPENT ON DUTIES BY MAJOR JOB GROUPS

DUTIES	OPERATIONS		OPERATIONS		JOB		RADAR		QUALITY		ATR		RESIDENT		OPERATION	
	ATR PERSONNEL (GRP193, N=213)	OPERATIONS CREW MEMBERS (GRP349, N=29)	MAINT. PERSONNEL (GRP318, N=28)	ATR OPERATORS (GRP289, N=11)	CONTROL PERSONNEL (GRP188, N=72)	MAINT. PERSONNEL (GRP208, N=17)	CONTROL PERSONNEL (GRP247, N=11)	WORKCENTER SUPERVISORS (GRP555, N=52)	INSTRUCTORS (GRP839, N=10)	COURSE INSTRUCTORS (GRP555, N=52)	INSTRUCTORS (GRP315, N=52)	INSTRUCTORS (GRP839, N=10)	INSTRUCTORS (GRP315, N=52)	ANALYSIS (GRP839)		
ORGANIZING AND PLANNING	1	*	*	*	11	17	11	7	2	2	1	1	1	*		
DIRECTING AND IMPLEMENTING	2	2	*	*	10	22	10	9	5	5	4	4	4	*		
INSPECTING AND EVALUATING	2	*	*	1	6	24	49	9	3	3	2	2	2	*		
TRAINING	1	2	*	*	3	11	4	8	81	81	3	3	3	*		
PERFORMING ADMINISTRATIVE AND SUPPLY FUNCTIONS	4	*	2	7	47	16	19	14	6	6	3	3	3	*		
PERFORMING OPERATIONS FUNCTIONS	21	50	47	33	4	3	*	10	1	1	85	85	85	*		
PERFORMING SITE SUPPORT FUNCTIONS	3	3	3	10	15	3	3	4	*	*	2	2	2	*		
PERFORMING RADAR SYSTEM INSTALLATION AND REMOVAL FUNCTIONS	3	*	2	*	*	*	*	1	*	1	*	*	*	*		
PERFORMING GENERAL AND PREVENTIVE MAINTENANCE	23	6	23	32	1	1	*	20	*	*	*	*	*	*		
Maintaining Power and Distribution Equipment	4	*	3	4	*	*	*	3	*	*	*	*	*	*		
Maintaining Timing Systems	2	*	*	*	*	*	*	*	*	*	*	*	*	*		
Maintaining Transmitter Systems	8	*	3	1	*	*	*	*	*	*	*	*	*	*		
Maintaining Antenna Systems	6	*	2	1	*	*	*	*	*	*	*	*	*	*		
Maintaining Receiver Systems	5	*	2	1	*	*	*	*	*	*	*	*	*	*		
Maintaining Display Equipment	5	*	2	8	2	*	*	*	*	*	*	*	*	*		
Maintaining Remote Equipment	*	*	1	*	*	*	*	*	*	*	*	*	*	*		
Maintaining Ancillary Equipment	7	*	1	*	1	*	*	1	*	*	1	*	*	*		
Maintaining Identification Friend or Foe (IFF) and Selective Identification Feature (SIF) Equipment	1	*	*	*	*	*	*	*	*	*	*	*	*	*		
Maintaining Range and Angle Tracking Systems	4	*	*	3	*	*	*	*	*	*	2	2	2	*		
Maintaining Computer Systems	3	*	*	4	*	*	*	*	*	*	*	*	*	*		

*DENOTES LESS THAN ONE PERCENT

TABLE 5
BACKGROUND INFORMATION FOR MAJOR JOB GROUPS

	AIR PERSONNEL	OPERATIONS CREW MEMBERS	OPERATIONS MAINT. PERSONNEL	ATR OPERATORS	JOB CONTROL PERSONNEL	RADAR MAINT. PERSONNEL	QUALITY CONTROL PERSONNEL	ATR WORKCENTER SUPERVISORS	RESIDENT COURSE INSTRUCTORS	OPERATION ANALYSIS
AVERAGE NUMBER OF TASKS PERFORMED:										
JOB DIFFICULTY INDEX:	186	71	105	28	17	84	56	101	15	15
AVERAGE PAYGRADE:	13.7	6.3	8.8	4.4	5.6	12.1	11.7	11.0	9.5	4.1
PERCENT LOCATED IN CONUS:	E-4	E-4	E-3, E-4	E-3	E-4, E-5	E-6, E-7	E-6	E-5	E-5	E-4
AVERAGE NUMBER OF PERSONS SUPERVISED:	85%	72%	79%	91%	89%	85%	83%	100%	100%	100%
DAFSC:										
30333	11%	17%	18%	91%	1%	-	-	-	-	30%
30333	74%	72%	79%	9%	19%	7%	4%	9%	8%	70%
30373	15%	11%	3%	-	4%	26%	19%	55%	7%	-
30399	-	-	-	-	-	-	28%	11%	36%	-
303X1	-	-	-	-	-	19%	17%	24%	-	45%
303X2	-	-	-	-	57%	22%	42%	-	40%	-
AVERAGE MONTHS TAPS: PERCENT IN FIRST ENLISTMENT:										
58	56	45	20	102	211	193	100	106	80	80
60%	62%	68%	91%	32%	1%	-	-	27%	40%	40%
MAJOR COMMAND:										
AFCC	2%	-	-	-	26%	27%	27%	-	-	-
SAC	54%	100%	100%	-	7%	24%	13%	18%	-	100%
TAC	32%	-	-	100%	60%	38%	43%	73%	-	-
USAFC	-	-	-	-	3%	6%	12%	-	-	-
OTHER	12%	-	-	-	4%	5%	5%	7%	100%	-
EQUIPMENT MAINTAINED:										
AN/RPS-11 RADAR/TRAINING SETS	29%	17%	18%	100%	1%	2%	3%	73%	-	10%
AN/RPS-9 RADAR SETS	25%	24%	29%	9%	1%	3%	1%	-	-	-
AN/MSQ-77 RADAR SYSTEMS	33%	21%	61%	-	1%	4%	4%	-	-	-
AN/UPN-6 INTERROGATOR SETS	23%	17%	21%	-	1%	3%	3%	9%	4%	-
AN/HSQ-2 RADAR SYSTEMS	20%	17%	32%	9%	1%	3%	4%	-	-	-

TABLE 6
JOB SATISFACTION DATA FOR MAJOR JOB GROUPS
(PERCENT MEMBERS RESPONDING)

	<u>ATR PERSONNEL</u>	<u>OPERATIONS CREW MEMBERS</u>	<u>OPERATIONS MAINT. PERSONNEL</u>	<u>ATR OPERATORS</u>	<u>JOB CONTROL PERSONNEL</u>	<u>RADAR MAINT. PERSONNEL</u>	<u>QUALITY CONTROL PERSONNEL</u>	<u>ATR WORKCENTER SUPERVISORS</u>	<u>RESIDENT COURSE INSTRUCTORS</u>	<u>OPERATION ANALYSIS</u>
<u>I FIND MY JOB:</u>										
NO RESPONSE	-	-	-	-	1	1	-	-	-	-
DULL	19	38	21	18	25	16	20	9	8	40
SO-SO	22	21	25	18	24	12	18	18	6	20
INTERESTING	59	41	54	64	51	71	61	73	86	40
<u>MY JOB UTILIZES MY TALENTS:</u>										
NO RESPONSE	-	-	-	36	53	25	25	-	-	-
NOT AT ALL TO VERY LITTLE	22	59	54	64	47	74	75	73	8	50
FAIRLY WELL OR BETTER	78	41	46						92	50
<u>MY JOB UTILIZES MY TRAINING:</u>										
NO RESPONSE	-	-	-	36	75	28	26	-	2	-
NOT AT ALL TO VERY LITTLE	21	48	29	64	25	71	72	18	6	50
FAIRLY WELL OR BETTER	79	52	71						92	50
<u>I PLAN TO REENLIST:</u>										
NO RESPONSE	3	-	4	-	-	3	1	-	2	-
NO, PLANNING TO RETIRE	1	-	-	-	13	36	40	-	10	-
NO OR PROBABLY NO	49	55	46	64	42	14	13	36	34	40
YES OR PROBABLY YES	47	45	50	36	45	47	46	64	54	60

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups forms a part of each occupational analysis. The DAFSC analysis helps to identify differences among skill level groups within the 303X3 specialty. It also aids in the analysis of career ladder documents, such as AFR 39-1 Specialty Descriptions and the Specialty Training Standard (STS).

The DAFSC analysis of the 303X3 specialty will discuss the duties and tasks common to the DAFSC groups, as well as discussing the tasks which best differentiate the 3-, 5-, 7-, and 9-skill level incumbents.

Skill Level Comparisons

As in most career ladders, the job performed by 3-skill level respondents is largely technical in nature. Table 7 reveals these incumbents roughly divide their time performing operator functions (35 percent) or radar maintenance duties (54 percent). This is realistic with the 303X3 career ladder structure, since most of the 3-skill level personnel are found in jobs which are either radar operator or maintenance oriented (see Table 8). Table 9 lists those tasks performed by the highest percentage of 3-skill level respondents. These tasks are primarily radar maintenance or operator oriented, and include operating manual tracker range controls, performing PMIs on antenna equipment, performing aircraft automatic tracking procedures, or removing or replacing resistors.

At the 5-skill level, Table 7 reveals the percentage of time spent on duties changes somewhat, with slightly less time spent on operator related tasks and slightly more time spent performing supervisory duties. These trends are again reflected in the types of jobs performed by 5-skill level personnel, with a number of these respondents found in the operations, maintenance, or supervisory major job groups (see Table 8). Typical tasks performed by 5-skill level personnel are primarily maintenance oriented, and include performing PMIs on transmitter equipment, performing corrosion control on antenna pedestals or towers, removing or replacing capacitors, or performing soldering on wiring terminals or connector plugs (see Table 10). It is interesting to note that the heterogeneity of the 303X3 career ladder is reflected in both Tables 9 and 10, with less than 20 tasks being performed by a majority of either the 3- or 5-skill level respondents.

In a comparison of the duties and tasks performed by 3- and 5-skill level incumbents, Table 7 reveals that DAFSC 30333 personnel seem to spend more time performing operator functions while DAFSC 30353 personnel spend more time performing supervisory duties. This trend is again reflected in Table 11, which lists the tasks which are performed in common and which best differentiate 3- and 5-skill level personnel. Tasks which differentiate DAFSC 30333 personnel are primarily operator related, and include operating manual tracker range controls or azimuth or elevation controls. Tasks which are performed by similar percentages of 3- and 5-skill level personnel involve both operations and maintenance, and include performing system run down procedures or performing PMIs on display equipment. Finally, maintenance or supervisory tasks seem to best differentiate 5-skill level respondents.

This is probably due to the fact that these tasks are somewhat more difficult, and therefore, these more experienced DAFSC 30353 incumbents can handle ATR maintenance somewhat more easily than DAFSC 30333 personnel. Examples of the tasks performed by substantially higher percentages of DAFSC 30353 personnel include conducting OJT, leveling antenna pedestals, or replacing antenna drive motors.

Seven-skill level incumbents take on more of a supervisory role, with these incumbents spending approximately 45 percent of their job time on supervisory duties. In addition, these incumbents spend substantially less time performing both operator or maintenance related duties (Table 7). This trend is also reflected in the types of jobs 7-skill personnel perform, with the bulk of these personnel performing supervisory oriented jobs (Table 8). An examination of representative tasks performed by DAFSC 30373 personnel reveals these incumbents typically perform such tasks as preparing APRs, conducting OJT, supervising Automatic Tracking Radar Specialists (AFSC 30353), or counseling personnel on personal or military related matters (Table 12). In addition, two important points should be made from this table. First, it is important to note that none of these tasks are operator or maintenance oriented. Secondly, 30373 personnel also perform a wide variety of jobs, with less than 15 tasks being performed by a majority of these respondents.

Table 13 lists the tasks which best differentiate and which are performed by similar percentages of 5- and 7-skill level personnel. Generally, routine radar operations or maintenance tasks, such as performing transmitter run up procedures, performing PMIs on receiver equipment, or performing system run down procedures are performed by greater percentages of 5-skill level personnel. Several maintenance and administrative tasks are performed by similar percentages of both 5- and 7-skill level personnel, and include isolating antenna servo drive system malfunctions, preparing supply issue/turn-in requests forms (AF Form 2005), or researching technical publications. Tasks which best differentiate 7-skill level personnel are all supervisory in nature, and include planning work assignments, supervising Automatic Tracking Radar Technicians (AFSC 30373), or preparing APRs. These task trends also seem to be reflected in the percentage of time spent on duties, with 30373 personnel spending approximately 45 percent of their job time performing supervisory duties while DAFSC 30353 personnel spend only 13 percent of their time performing these same duties (see Table 7).

Nine-skill personnel are primarily supervisors or managers, with Table 7 revealing these respondents spend approximately 80 percent of their job time performing supervisory duties. Table 8 reveals these personnel perform primarily supervisory jobs, with the majority of these incumbents falling into job types in the Radar Maintenance Supervisors cluster. Table 14 lists the representative tasks performed by DAFSC 30399 personnel, with tasks such as interpreting policies for subordinates, scheduling temporary duty, or participating in staff meetings being typical for these incumbents.

Table 15 lists those tasks which are performed by similar percentages of 7- and 9-skill level incumbents, as well as tasks which are performed by substantially higher percentages of 7- or 9-skill level personnel. Several supervisory, administrative, and maintenance type tasks are identified as being performed by higher percentages of 7-skill level respondents. Examples of these tasks include supervising Automatic Tracking Radar Specialists

(AFSC 30353), preparing maintenance data collection record forms (AFTO Form 349), and performing PMIs on antenna equipment. A possible explanation of why a higher percentage of DAFSC 30373 incumbents are supervising DAFSC 30353 personnel could be the fact that DAFSC 30399 personnel are the supervisors or managers for not only the 303X3 specialty, but also for the 303X1 and 303X2 specialties. Tasks which are performed by similar percentages of 7- and 9-skill level personnel are primarily supervisory in nature, and include directing corrosion control programs, implementing safety programs, or developing organizational charts. Finally, tasks which best differentiate 9-skill level personnel are also supervisory in nature; however, many of these tasks imply a higher level of supervision than the tasks performed by similar percentages of 7- and 9-skill level personnel. Some of these differentiating tasks include supervising military personnel with AFSSs other than 303X1, 303X2, or 303X3, drafting local policy or higher headquarters directives, or establishing organizational policies, office instructions (OI) or standard operating procedures (SOP).

Summary

An examination of the tasks and duties performed by various 303X3 skill level groups reveals a wide variety of jobs are performed by the personnel in this career ladder. Only personnel at the 9-skill level perform a substantial number of the same tasks, which indicates that the senior supervisors or managers in this specialty perform the same type of job, while lower skill level incumbents were found to perform jobs ranging from operating plotting boards to isolating malfunctions on antenna equipment.

Three-skill level personnel are primarily technicians, with these incumbents roughly dividing their time between operator and radar maintenance functions. DAFSC 30353 personnel also spend a majority of their job time on technical duties, but spend slightly less time on operator related tasks and more time on supervisory type tasks. Seven-skill level personnel are firstline supervisors, and roughly divide their time performing supervisory and radar maintenance type duties. DAFSC 30399 personnel are the supervisors and managers of the career ladder, with these incumbents spending approximately 80 percent of their job time on supervisory duties.

TABLE 7
RELATIVE TIME SPENT ON DUTIES BY 303X3 DAFSC GROUPS

DUTIES	DAFSC 30333 PERSONNEL (N=99)	DAFSC 30353 PERSONNEL (N=396)	DAFSC 30373 PERSONNEL (N=170)	DAFSC 30379 PERSONNEL (N=88)
ORGANIZING AND PLANNING	1	3	10	20
DIRECTING AND IMPLEMENTING	1	3	14	23
INSPECTING AND EVALUATING	2	3	19	34
TRAINING	1	4	10	5
PERFORMING ADMINISTRATIVE AND SUPPLY FUNCTIONS	4	7	12	11
PERFORMING OPERATIONS FUNCTIONS	35	27	8	*
PERFORMING SITE SUPPORT FUNCTIONS	6	4	3	2
PERFORMING RADAR SYSTEM INSTALLATION AND REMOVAL FUNCTIONS	3	3	2	*
PERFORMING GENERAL AND PREVENTIVE MAINTENANCE	22	18	8	*
MAINTAINING POWER AND DISTRIBUTION EQUIPMENT	2	3	1	*
MAINTAINING TIMING SYSTEMS	*	1	*	*
MAINTAINING TRANSMITTER SYSTEMS	4	6	3	*
MAINTAINING ANTENNA SYSTEMS	3	4	2	*
MAINTAINING RECEIVER SYSTEMS	3	3	2	*
MAINTAINING DISPLAY EQUIPMENT	5	2	2	*
MAINTAINING REMOTE EQUIPMENT	*	*	*	*
MAINTAINING ANCILLARY EQUIPMENT	2	1	*	*
MAINTAINING IDENTIFICATION FRIEND OR FOE (IFF) AND SELECTIVE IDENTIFICATION FEATURE (SIF) EQUIPMENT	*	*	*	*
MAINTAINING RANGE AND ANGLE TRACKING SYSTEMS	3	3	1	*
MAINTAINING COMPUTER SYSTEMS	1	2	1	*

*DENOTES LESS THAN ONE PERCENT

TABLE 8
DAFSC DISTRIBUTION FOR MAJOR JOB GROUPS

MAJOR JOB GROUPS	DAFSC					
	30333	30353	30373	30399	303X1	303X2
ATR PERSONNEL	30	202	41			
OPERATIONS CREW MEMBERS	5	21	3			
OPERATIONS MAINTENANCE PERSONNEL	5	22	1			
ATR OPERATORS	10	1				
JOB CONTROL PERSONNEL	1	14	3		13	41
RADAR MAINTENANCE SUPERVISORS		12	46	50	30	39
QUALITY CONTROL PERSONNEL		5	20	13	28	48
ATR WORKCENTER SUPERVISORS		1	6	4		
RESIDENT COURSE INSTRUCTORS		4	4		22	22
OPERATIONS ANALYSTS	3	7				
NOT GROUPED	<u>45</u>	<u>102</u>	<u>43</u>	<u>16</u>	<u>128</u>	<u>165</u>
TOTAL	99	396	170	88	750*	724*

* THE 303X1 AND 303X2 COLUMNS DO NOT ADD UP TO 100 PERCENT DUE TO THE FACT THAT 303X1 AND 303X2 EXCLUSIVE JOBS ARE NOT LISTED

TABLE 9
REPRESENTATIVE TASKS PERFORMED BY 3-SKILL LEVEL PERSONNEL

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING (N=99)</u>
PERFORM GENERAL HOUSEKEEPING PROCEDURES	61
PERFORM AREA BEAUTIFICATION	59
REMOVE OR REPLACE FUSES OR FUSE HOLDERS	59
PERFORM POWER SUPPLY OPERATIONAL CHECKS	58
OPERATE MANUAL TRACKER AZIMUTH OR ELEVATION CONTROLS	56
OPERATE MANUAL TRACKER RANGE CONTROLS	56
PERFORM SYSTEM RUN DOWN PROCEDURES	55
DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES	54
PERFORM AIRCRAFT AUTOMATIC TRACKING PROCEDURES	52
REMOVE OR REPLACE RESISTORS	52
PERFORM TRANSMITTER RUNUP PROCEDURES	51
ADJUST POWER SUPPLIES OTHER THAN TRANSMITTER HIGH VOLTAGE POWER SUPPLIES	51
PERFORM SOLDERING ON WIRING TERMINALS OR CONNECTOR PLUGS	51
PERFORM PMIs ON TRANSMITTER EQUIPMENT	48
PERFORM PMIs ON ANTENNA EQUIPMENT	48
CLEAN OR REPLACE AIR OR MOISTURE FILTERS	43
REMOVE OR REPLACE ELECTRON TUBES	43
PERFORM AUTOMATIC GAIN CONTROL CHECKS	43
REMOVE OR REPLACE RELAYS	41
PERFORM SOLDERING ON CIRCUIT BOARDS	37
PERFORM CORROSION CONTROL ON EQUIPMENT VANS OR TRAILERS	35
PERFORM I-BAND RADAR SEARCH OR LOCK ON PROCEDURES	35
PERFORM PREOPERATIONAL CALIBRATION CHECKS	34
INITIATE AIRCRAFT TRACKING	32
INTERPRET PLANS, DIAGRAMS, OR SCHEMATICS	32

TABLE 10
REPRESENTATIVE TASKS PERFORMED BY 5-SKILL LEVEL PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=396)
REMOVE OR REPLACE FUSES OR FUSE HOLDERS	67
REMOVE OR REPLACE RESISTORS	63
DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES	59
PERFORM GENERAL HOUSEKEEPING PROCEDURES	58
PERFORM PMIs ON TRANSMITTER EQUIPMENT	58
REMOVE OR REPLACE CAPACITORS	58
PERFORM POWER SUPPLY OPERATIONAL CHECKS	57
ADJUST POWER SUPPLIES OTHER THAN TRANSMITTER HIGH VOLTAGE POWER SUPPLIES	57
PERFORM SOLDERING ON WIRING TERMINALS OR CONNECTOR PLUGS	56
REMOVE OR REPLACE SWITCHES	56
REMOVE OR REPLACE RELAYS	55
PERFORM PMIs ON RECEIVER EQUIPMENT	55
PERFORM AREA BEAUTIFICATION	55
PERFORM TRANSMITTER RUN UP PROCEDURES	55
PERFORM PMIs ON ANTENNA EQUIPMENT	55
PERFORM CORROSION CONTROL ON ANTENNA PEDESTALS OR TOWERS	55
PERFORM SYSTEM RUN DOWN PROCEDURES	54
PERFORM CORROSION CONTROL ON EQUIPMENT VANS OR TRAILERS	53
REMOVE OR REPLACE CRYSTALS	51
REMOVE OR REPLACE SEMICONDUCTOR DEVICES	51
PERFORM SOLDERING ON CIRCUIT BOARDS	49
PERFORM PMIs ON RANGE AND ANGLE TRACK EQUIPMENT	47
PERFORM AUTOMATIC GAIN CONTROL CHECKS	45
ALIGN AUTOMATIC FREQUENCY CONTROL (AFC) CIRCUITS	45

TABLE 11

TASKS WHICH BEST DIFFERENTIATE DAFSC 30333 AND 30353 PERSONNEL
(PERCENT MEMBERS PERFORMING)

<u>TASKS</u>	<u>DAFSC 30333 PERSONNEL (N=99)</u>	<u>DAFSC 30353 PERSONNEL (N=396)</u>	<u>DIFFERENCE</u>
OPERATE MANUAL TRACKER RANGE CONTROLS	56	36	+20
OPERATE MANUAL TRACKER AZIMUTH OR ELEVATION CONTROLS	55	37	+18
CONVERT GRID SYSTEM DATA TO AZIMUTH AND RANGE DATA	23	13	+10
PERFORM AIRCRAFT AUTOMATIC TRACKING PROCEDURES	51	41	+10
ALIGN POWER DISTRIBUTION CONTROL CIRCUITRY	14	7	+ 7
ADJUST TRANSMITTER BUFFER AMPLIFIERS	8	3	+ 5
ADJUST TRANSMITTER AMPLIFIER MIXERS	13	8	+ 5
PERFORM GENERAL HOUSEKEEPING PROCEDURES	60	58	+ 2
PERFORM POWER SUPPLY OPERATIONAL CHECKS	57	57	*
PERFORM SYSTEM RUN DOWN PROCEDURES	54	54	*
ALIGN INDICATOR SWEEP GENERATORS	25	25	*
INITIATE AIRCRAFT TRACKING	32	32	*
PERFORM AUTOMATIC GAIN CONTROL CHECKS	44	45	- 1
PERFORM PMIs ON DISPLAY EQUIPMENT	40	41	- 1
ALIGN A SCAN INDICATORS	28	30	- 2
ORIENT NEWLY ASSIGNED PERSONNEL	10	34	-24
REMOVE OR REPLACE TRANSFORMERS	26	50	-24
REMOVE OR REPLACE METERS	21	45	-24
LEVEL ANTENNA PEDESTALS	19	43	-24
REMOVE OR REPLACE ANTENNA DRIVE MOTORS	9	34	-25
PERFORM CORROSION CONTROL ON ANTENNA PEDESTALS OR TOWERS	29	55	-26
REMOVE OR REPLACE POWER SUPPLIES OTHER THAN TRANSMITTER HIGH VOLTAGE POWER SUPPLIES	20	46	-26
CONDUCT OJT	11	41	-30

* DENOTES LESS THAN ONE PERCENT

TABLE 12
REPRESENTATIVE TASKS PERFORMED BY 7-SKILL LEVEL PERSONNEL

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING (N=170)</u>
PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS	74
PREPARE APRs	64
ORIENT NEWLY ASSIGNED PERSONNEL	63
COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED MATTERS	59
SUPERVISE AUTOMATIC TRACKING RADAR SPECIALISTS (AFSC 30353)	53
DETERMINE WORK PRIORITIES	53
DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES	53
PLAN WORK ASSIGNMENTS	52
COUNSEL TRAINEES ON TRAINING PROGRESS	51
INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	49
WRITE CORRESPONDENCE	49
REVIEW CORRESPONDENCE OR REPORTS	49
CONDUCT OJT	49
MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	46
CERTIFY STATUS OF REPARABLE, SERVICEABLE, OR CONDEMNED PARTS	45
EVALUATE INDIVIDUALS FOR RECOGNITION	44
EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	41
ASSIGN PERSONNEL TO DUTY POSITIONS	41
PREPARE REPLIES TO INSPECTION REPORTS	41
PERFORM EQUIPMENT INSPECTIONS	39
EVALUATE OJT TRAINERS OR TRAINEES	39
PERFORM WORK AREA SECURITY INSPECTIONS	39
ESTABLISH WORK SCHEDULES	38
EVALUATE INSPECTION REPORTS OR PROCEDURES	38

TABLE 13

TASKS WHICH BEST DIFFERENTIATE DAFSC 30353 AND 30373 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 30353 PERSONNEL (N=396)	DAFSC 30373 PERSONNEL (N=170)	DIFFERENCE
PERFORM TRANSMITTER RUN UP PROCEDURES	55	20	+35
PERFORM POWER SUPPLY OPERATIONAL CHECKS	56	22	+34
PERFORM SYSTEM RUN DOWN PROCEDURES	54	21	+33
PERFORM PMIs ON TRANSMITTER EQUIPMENT	58	26	+32
REMOVE OR REPLACE FUSES OR FUSE HOLDERS	67	35	+32
REMOVE OR REPLACE RESISTORS	63	32	+31
OPERATE MANUAL TRACKER AZIMUTH OR ELEVATION CONTROLS	37	6	+31
PERFORM PMIs ON RECEIVER EQUIPMENT	55	25	+30
MAINTAIN MAINTENANCE DATA COLLECTION RECORD FORMS (AFTO FORM 349)	41	38	+ 3
ISOLATE ANTENNA SERVO DRIVE SYSTEM MALFUNCTIONS	24	22	+ 2
COLLIMATE ANTENNAS	24	22	+ 2
ISOLATE IF AMPLIFIER OR PREAMPLIFIER	19	18	+ 1
RESEARCH TECHNICAL PUBLICATIONS	27	27	*
PERFORM OPERATOR MAINTENANCE ON VEHICLES	26	28	- 2
PREPARE SUPPLY ISSUE/TURN-IN REQUESTS FORMS (AF FORM 2005)	41	43	- 2
PREPARE REPLIES TO INSPECTION REPORTS	7	41	-34
EVALUATE INDIVIDUALS FOR RECOGNITION	9	43	-34
PLAN WORK ASSIGNMENTS	17	52	-35
SUPERVISE AUTOMATIC TRACKING RADAR TECHNICIANS (AFSC 3073)	3	40	-37
COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED MATTERS	18	58	-40
REVIEW CORRESPONDENCE OR REPORTS	6	49	-43
PREPARE APRs	20	64	-44
PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS	25	73	-48

* DENOTES LESS THAN ONE PERCENT

TABLE 14
REPRESENTATIVE TASKS PERFORMED BY 9-SKILL LEVEL PERSONNEL

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING (N=88)</u>
PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS	94
WRITE CORRESPONDENCE	84
REVIEW CORRESPONDENCE OR REPORTS	83
COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED MATTERS	76
INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	75
PREPARE REPLIES TO INSPECTION REPORTS	73
ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OI), OR STANDARD OPERATING PROCEDURES (SOP)	72
ORIENT NEWLY ASSIGNED PERSONNEL	72
PREPARE RECOMMENDATIONS FOR AWARDS OR DECORATIONS	70
PREPARE APRs	69
DETERMINE WORK PRIORITIES	69
EVALUATE INSPECTION REPORTS OR PROCEDURES	68
DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT OR SUPPLIES	68
SCHEDULE TEMPORARY DUTY, LEAVES, OR PASSES	67
EVALUATE INDIVIDUALS FOR RECOGNITION	66
INDORSE AIRMEN PERFORMANCE REPORTS (APR)	65
PREPARE BRIEFINGS	65
ASSIGN PERSONNEL TO DUTY POSITIONS	63
ANALYZE TRENDS IN SYSTEM MALFUNCTIONS	60
CONDUCT BRIEFINGS OTHER THAN CREW BRIEFINGS	59
DETERMINE TRANSPORTATION REQUIREMENTS	58
DRAFT LOCAL POLICY OR HIGHER HEADQUARTERS DIRECTIVES	58
EVALUATE MAINTENANCE PROCEDURES	56
IMPLEMENT SELF-INSPECTION PROCEDURES	56

TABLE 15

TASKS WHICH BEST DIFFERENTIATE DAFSC 30373 AND 30399 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 30373 PERSONNEL (N=170)	DAFSC 30399 PERSONNEL (N=88)	DIFFERENCE
SUPERVISE AUTOMATIC TRACKING RADAR SPECIALISTS (AFSC 30353)	53	13	+40
SUPERVISE APPRENTICE AUTOMATIC TRACKING RADAR SPECIALISTS (AFSC 30333)	39	7	+32
PREPARE SUPPLY ISSUE/TURN-IN REQUESTS FORMS (AF FORM 2005)	43	14	+29
REMOVE OR REPLACE FUSES OR FUSE HOLDERS	35	6	+29
REMOVE OR REPLACE RESISTORS	32	5	+27
PREPARE MAINTENANCE DATA COLLECTION RECORD FORMS (AFTO 349)	38	11	+27
PERFORM SOLDERING ON WIRING TERMINALS OR CONNECTOR PLUGS	30	4	+26
PERFORM PMIs ON ANTENNA EQUIPMENT	28	3	+25
PLAN WORK ASSIGNMENTS	52	48	+ 4
DIRECT CORROSION CONTROL PROGRAMS	25	23	+ 2
PERFORM PERSONNEL PROFICIENCY EVALUATIONS	21	19	+ 2
DEVELOP ORGANIZATIONAL CHARTS	22	22	*
DETERMINE OJT TRAINING REQUIREMENTS	38	38	*
MAINTAIN STATUS BOARDS, GRAPHS, OR CHARTS	31	33	- 2
IMPLEMENT SAFETY PROGRAMS	29	32	- 3
PREPARE REPLIES TO INSPECTION REPORTS	41	73	-32
ANALYZE TRENDS IN SYSTEM MALFUNCTIONS	27	60	-33
PREPARE AGENDA FOR STAFF MEETINGS	10	44	-34
SUPERVISE AIRCRAFT CONTROL AND WARNING RADAR TECHNICIANS (AFSC 30372)	2	38	-36
DETERMINE TRANSPORTATION REQUIREMENTS	21	58	-37
SUPERVISE MILITARY PERSONNEL WITH AFSs OTHER THAN 303X1, 303X2, OR 303X3	15	53	-38
WRITE STAFF STUDIES, SURVEYS, OR SPECIAL REPORTS	14	54	-40
DRAFT LOCAL POLICY OR HIGHER HEADQUARTERS DIRECTIVES	16	58	-42
ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OI), OR STANDARD OPERATING PROCEDURES (SOP)	21	71	-50

*DENOTES LESS THAN ONE PERCENT

COMPARISON OF SURVEY DATA TO AFR 39-1 SPECIALTY DESCRIPTIONS

Survey data for the 303X3 career ladder were compared to AFR 39-1 Specialty Descriptions, dated 31 October 1978 (for DAFSCs 30313, 30333, 30353, and 30373) and 30 April 1979 (for DAFSC 30399). These descriptions are intended to give a broad overview of the duties and tasks required to be performed by the various skill level personnel. Overall, the 3-, 5-, 7- and 9-skill level descriptions were found to provide a clear, concise overview of the major duties and tasks performed by 303X3 incumbents.

ANALYSIS OF EXPERIENCE (TAFMS) GROUPS

In addition to the skill level analysis, survey respondents were also examined on the basis of months of Total Active Federal Military Service (TAFMS). This analysis helps to determine how jobs and job perceptions change over time, and can help describe the types of jobs more junior 303X3 personnel can look forward to performing in the future.

As expected, no major deviations from the usual pattern of increasing time spent on supervisory duties with increasing months TAFMS were noted (see Table 16). Generally, more junior airmen spend more time performing technical radar functions, such as performing radar operations or performing general or preventive maintenance, while senior incumbents spend more time on directing and implementing or inspecting and evaluating duties.

Job Satisfaction Analysis

Job satisfaction indices for personnel in the first enlistment (1-48 months TAFMS), second enlistment (49-96 months TAFMS), and career (97+ months TAFMS) groups were also examined. Job interest, perceived utilization of talents and training, and reenlistment intentions are presented in Table 17, along with the comparative sample for similar personnel from all related career fields analyzed in 1979. (These sample career ladders included ones in the 304XX, 306XX, 316XX, 321XX, 328XX, 423XX, 427XX, and 461XX career fields.) When compared to other career fields sampled, 303X3 first enlistment personnel have about the same job satisfaction indicators, with 55 percent finding their job interesting and 40 percent planning to reenlist. DAFSC 303X3 second enlistment personnel show the same job satisfaction trends as 303X3 first enlistment personnel, with approximately the same percentages of second enlistment personnel finding their job interesting or planning to reenlist. DAFSC 303X3 career personnel are not as satisfied with their job as career comparative sample personnel, with 10-15 percent fewer 303X3 career personnel finding their job interesting or perceiving their job utilizes their talents or training at least fairly well.

First Enlistment Personnel

First enlistment personnel were also examined on the basis of both common tasks performed and various background information. Table 18 lists those tasks performed by the greatest percentages of 303X3 first enlistment (1-48 months TAFMS) incumbents. Generally, these most common tasks involve some aspect of radar operations or maintenance, and include performing PMIs on transmitter equipment, performing aircraft automatic tracking procedures, performing power supply operational checks, or performing soldering on wiring terminals or connector plugs.

Although the tasks listed in Table 18 are characteristic of most first enlistment personnel, other functions performed by these incumbents vary widely depending on the job they perform. Figure 2 presents the distribution of first enlistment 303X3 airmen across job groups identified in the CAREER LADDER STRUCTURE section. As expected, most first enlistment personnel are found in the Automatic Tracking Radar Personnel cluster.

Typical tasks performed by first enlistment in both this major job group and some of the other groups where first enlistment personnel are found include:

ATR Personnel

- perform transmitter run up procedures
- interpret plans, diagrams, or schematics
- perform aircraft automatic tracking procedures
- perform PMIs on receiver equipment

Operations Crew Members

- record bomb away times
- confirm ECM scores
- measure circular errors or azimuths
- operate plotting boards

Operations Maintenance Personnel

- perform PMIs on computer equipment
- perform PMIs on antenna equipment
- measure aircraft tracks
- record bomb away times

ATR Operators

- operate manual tracker azimuth or elevation controls
- adjust B-scan indicators
- operate manual tracker range controls
- perform PMIs on vans or trailers

In addition to a task analysis, the various types of radar equipment maintained and test equipment utilized were also examined. Table 19 reveals that the AN/MPS-T1, AN/MSQ-77, and AN/MPS-9 are among the most common types of radars maintained by 303X3 first enlistment personnel. Table 19 also reveals that high voltage probes and meg-ohm meters are among the most common types of test equipment utilized by these incumbents.

TABLE 16
RELATIVE PERCENT TIME SPENT ON DUTIES BY 303X3 TAFMS GROUPS

DUTIES	MONTHS TAFMS					
	1-48 (N=324)	49-96 (N=143)	97-144 (N=81)	145-192 (N=41)	193-240 (N=54)	241+ (N=18)
ORGANIZING AND PLANNING	2	4	5	9	14	14
DIRECTING AND IMPLEMENTING	2	5	8	12	18	20
INSPECTING AND EVALUATING	1	5	12	18	26	25
TRAINING	2	5	10	13	8	10
PERFORMING ADMINISTRATIVE AND SUPPLY FUNCTIONS	5	8	10	15	13	14
PERFORMING OPERATIONS FUNCTIONS	31	23	18	10	6	2
PERFORMING SITE SUPPORT FUNCTIONS	4	4	3	3	3	3
PERFORMING RADAR SYSTEM INSTALLATION AND REMOVAL FUNCTIONS	4	3	2	2	2	*
PERFORMING GENERAL AND PREVENTIVE MAINTENANCE	20	17	13	8	3	4
MAINTAINING POWER AND DISTRIBUTION EQUIPMENT	3	2	2	*	*	1
MAINTAINING TIMING SYSTEMS	1	*	*	*	*	*
MAINTAINING TRANSMITTER SYSTEMS	6	5	4	2	*	2
MAINTAINING ANTENNA SYSTEMS	4	4	3	2	2	*
MAINTAINING RECEIVER SYSTEMS	3	3	2	2	*	1
MAINTAINING DISPLAY EQUIPMENT	5	3	2	2	2	*
MAINTAINING REMOTE EQUIPMENT	*	*	*	*	*	*
MAINTAINING ANCILLARY EQUIPMENT	1	2	*	*	*	*
MAINTAINING IDENTIFICATION FRIEND OR FOE (IFF) AND SELECTIVE IDENTIFICATION FEATURE (SIF) EQUIPMENT	*	1	*	*	*	*
MAINTAINING RANGE AND ANGLE TRACKING SYSTEMS	3	3	2	1	*	*
MAINTAINING COMPUTER SYSTEMS	2	2	2	*	*	*

* DENOTES LESS THAN ONE PERCENT

TABLE 17

JOB SATISFACTION AND RELATED DATA FOR 303X3 FIRST ENLISTMENT (1-48 MONTHS TAFMS), SECOND ENLISTMENT (49-96 MONTHS TAFMS), CAREER (97+ MONTHS TAFMS), AND COMPARATIVE SAMPLE PERSONNEL (PERCENT MEMBERS RESPONDING)

	MONTHS TAFMS					
	1-48		49-96		97+	
	1979 COMP SAMPLE* (N=324)	1979 COMP SAMPLE* (N=6,124)	1979 COMP SAMPLE* (N=143)	1979 COMP SAMPLE* (N=2,787)	1979 COMP SAMPLE* (N=194)	1979 COMP SAMPLE* (N=4,643)
<u>I FIND MY JOB:</u>						
NO RESPONSE	-	2	-	2	2	2
DULL	23	19	25	19	21	11
SO-SO	22	23	22	22	16	13
INTERESTING	55	56	53	57	61	74
<u>MY JOB UTILIZES MY TALENTS:</u>						
NO RESPONSE	-	1	-	1	1	1
NOT AT ALL TO VERY						
LITTLE	34	34	36	31	29	19
FAIRLY WELL OR BETTER	66	65	64	68	70	80
<u>MY JOB UTILIZES MY TRAINING:</u>						
NO RESPONSE	-	1	-	1	2	1
NOT AT ALL TO VERY						
LITTLE	35	40	33	33	35	23
FAIRLY WELL TO BETTER	65	59	67	66	63	76
<u>I PLAN TO REENLIST:</u>						
NO RESPONSE	-	2	-	2	-	2
NO, PLAN TO RETIRE	-	-	-	-	18	-
NO OR PROBABLY NO	60	64	46	47	18	29
YES OR PROBABLY YES	40	34	54	51	64	69

*(INCLUDES PERSONNEL IN AFSCs 304XX, 306XX, 316XX, 321XX, 328XX, 423XX, 427XX, AND 461XX)

FIGURE 2

JOB GROUP DISTRIBUTION FOR FIRST ENLISTMENT 303X3 AIRMEN
(N=324)

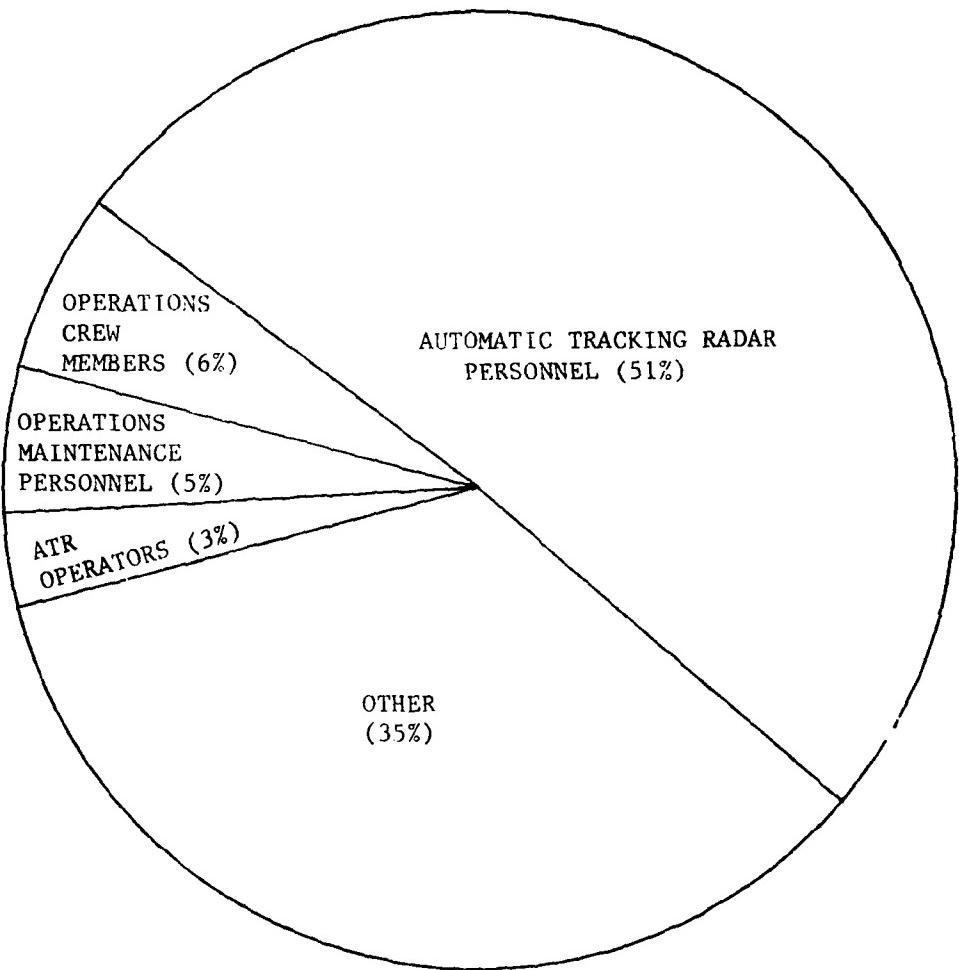


TABLE 18
 REPRESENTATIVE TASKS PERFORMED BY 303X3 FIRST ENLISTMENT
 (1-48 MONTHS TAFMS) PERSONNEL
 (PERCENT MEMBERS PERFORMING)

<u>TASKS</u>	FIRST ENLISTMENT PERSONNEL (N=324)
REMOVE OR REPLACE FUSES OR FUSE HOLDERS	70
PERFORM GENERAL HOUSEKEEPING PROCEDURES	64
PERFORM POWER SUPPLY OPERATIONAL CHECKS	63
REMOVE OR REPLACE RESISTORS	63
DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES	62
PERFORM TRANSMITTER RUN UP PROCEDURES	61
PERFORM AREA BEAUTIFICATION	61
PERFORM PMIs ON TRANSMITTER EQUIPMENT	60
PERFORM SYSTEM RUN DOWN PROCEDURES	60
PERFORM PMIs ON ANTENNA EQUIPMENT	58
ADJUST POWER SUPPLIES OTHER THAN TRANSMITTER HIGH VOLTAGE POWER SUPPLIES	58
PERFORM SOLDERING ON WIRING TERMINALS OR CONNECTOR PLUGS	58
REMOVE OR REPLACE CAPACITORS	57
PERFORM PMIs ON RECEIVER EQUIPMENT	55
PERFORM CORROSION CONTROL ON ANTENNA PEDESTALS OR TOWERS	55
PERFORM CORROSION CONTROL ON EQUIPMENT VANS OR TRAILERS	54
CLEAN OR REPLACE AIR OR MOISTURE FILTERS	53
REMOVE OR REPLACE ELECTRON TUBES	53
OPERATE MANUAL TRACKER AZIMUTH OR ELEVATION CONTROLS	51
PERFORM AIRCRAFT AUTOMATIC TRACKING PROCEDURES	51
REMOVE OR REPLACE CRYSTALS	50
OPERATE MANUAL TRACKER RANGE CONTROLS	49
PERFORM AUTOMATIC GAIN CONTROL CHECKS	49
ALIGN AUTOMATIC FREQUENCY CONTROL (AFC) CIRCUITS	48
PERFORM PMIs ON RANGE AND ANGLE TRACK EQUIPMENT	44

TABLE 19
TYPES OF RADAR EQUIPMENT MAINTAINED AND TEST EQUIPMENT
UTILIZED BY FIRST ENLISTMENT PERSONNEL

<u>RADAR EQUIPMENT</u>	<u>PERCENT MEMBERS MAINTAINING (N=324)</u>
AN/MPS-T1 RADAR/TRAINING SETS	28
AN/MSQ-77 RADAR SYSTEM	25
AN/MPS-9 RADAR SET	21
AN/UPX-6 INTERROGATOR SET	14
AN/MSQ-2 RADAR SYSTEM	13
AN/GPA-26 AMPLIFIER INDICATOR GROUP	11
AN/MSQ-46 RADAR SYSTEM	11
AN/MSQ-39 RADAR SYSTEM	10
AN/MPQ-T2A RADAR SYSTEM	10

<u>TEST EQUIPMENT</u>	<u>PERCENT MEMBERS UTILIZING (N=324)</u>
HIGH VOLTAGE PROBES	56
MEG-OHM METERS	46
TRANSISTOR TESTERS	27
COUPLERS	27
PRINTED CIRCUIT CARD TEST SETS	21
NOISE FIGURE METERS	19
STANDING WAVE RATIO METERS	19
PACE KITS	17
DIAL INDICATORS	17
FLUX METERS	16
HIGH VOLTAGE MODULATOR DUMMIES	12
FIELD STRENGTH METERS	11

ANALYSIS OF CONUS VERSUS OVERSEAS GROUPS

A comparison was made between the tasks performed and the background data for the DAFSC 30353 personnel who were assigned within the CONUS versus those who were assigned to overseas locations. Overall, the jobs performed by the two groups are fairly similar with respect to the tasks performed and the time spent on those tasks. However, the job of overseas respondents does not seem to involve radar operations functions to the same degree of CONUS respondents.

A number of task differences and similarities were noted between CONUS and overseas incumbents. For example, a large number of CONUS personnel reported spending time on such tasks as operating manual tracker range controls, encoding RBS scores, preparing radar vans for shipment, or loading computer programs. Maintenance type tasks, such as replacing electrical motors, interpreting plans, diagrams, or schematics, removing resistors, or performing soldering on wiring terminals are performed by similar percentages of both DAFSC 30353 CONUS and overseas respondents. Finally, slightly greater percentages of overseas incumbents perform several types of operator or maintenance related tasks, such as performing PMIs on ancillary equipment, performing PMIs on timing equipment, or performing operator maintenance on vehicles. Table 20 provides a list of those tasks which best differentiate between the CONUS and overseas incumbents.

A comparison of the background data reveals that a substantially larger percentage of CONUS personnel were in their first enlistment (66 percent versus 24 percent) while the average number of tasks performed was about the same. Table 21 also reveals that job satisfaction indicators vary somewhat between the two groups, with a greater percentage of CONUS respondents finding their job interesting (55 percent versus 39) percent) while a lower percentage plan to reenlist (44 percent versus 56 percent). Finally, Table 21 reveals various types of radars and radar equipment maintained by both groups. Overall, roughly equal percentages of CONUS and overseas respondents maintain these types of equipment, and no major equipment differences were noted.

TABLE 20

TASKS WHICH BEST DIFFERENTIATE DAFSC 30353 CONUS AND OVERSEAS PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	CONUS 30353 PERSONNEL (N=345)	OVERSEAS 30353 PERSONNEL (N=54)	DIFFERENCE
OPERATE MANUAL TRACKER RANGE CONTROLS	39	15	+24
ENCODE RBS SCORES	26	3	+23
OPERATE MANUAL TRACKER AZIMUTH OR ELEVATION CONTROLS	40	18	+22
PREPARE RADAR VANS FOR SHIPMENT	28	7	+21
PERFORM AIRCRAFT AUTOMATIC TRACKING PROCEDURES	44	24	+20
LOAD COMPUTER PROGRAMS	26	7	+19
PERFORM TRANSMITTER RUN UP PROCEDURES	58	39	+19
PERFORM AUTOMATIC FREQUENCY CONTROL CHECKS	43	24	+19
REMOVE OR REPLACE ELECTRICAL MOTORS OR GENERATORS	42	41	+ 1
PERFORM SOLDERING ON WIRING TERMINALS OR CONNECTOR PLUGS	55	55	*
BORESLIGHT ANTENNAS	35	35	*
PREPARE REPARABLE ITEM PROCESSING TAG FORMS (AFTO FORM 350)	37	37	*
REMOVE OR REPLACE RESISTORS	63	63	*
INSTALL OR REMOVE CRIMPED WIRING TERMINALS	37	37	*
REMOVE OR REPLACE CAPACITORS	59	59	*
INTERPRET PLANS, DIAGRAMS, OR SCHEMATICS	43	44	- 1
PERFORM ACCEPTANCE TESTING	5	13	- 8
MEASURE AIRCRAFT TRACKS	26	35	- 9
PERFORM PMIs ON TIMING EQUIPMENT	18	28	-10
DRIVE HEAVY DUTY VEHICLES, SUCH AS 1½ TON TRUCKS OR 10 TON TRACTOR TRAILER COMBINATIONS	19	29	-10
PERFORM OPERATOR MAINTENANCE ON VEHICLES	24	35	-11
PERFORM PMIs ON ANCILLIARY EQUIPMENT	19	31	-12

* DENOTES LESS THAN ONE PERCENT

TABLE 21
BACKGROUND AND JOB SATISFACTION INFORMATION
FOR DAFSC 30353 CONUS AND OVERSEAS GROUPS

	<u>30353</u> <u>CONUS</u> <u>PERSONNEL</u>	<u>30353</u> <u>OVERSEAS</u> <u>PERSONNEL</u>
AVERAGE NUMBER OF TASKS PERFORMED:	123	101
PERCENT SUPERVISING:	22%	30%
AVERAGE MONTHS TAFMS:	51	76
PERCENT IN FIRST ENLISTMENT:	66%	24%
<hr/>		
JOB INTEREST:	55%	39%
JOB UTILIZES TALENTS AT LEAST FAIRLY WELL:	66%	52%
JOB UTILIZES TRAINING AT LEAST FAIRLY WELL:	64%	63%
REENLISTMENT INTENTIONS:	44%	56%
<hr/>		
WORK SHIFT:		
DAY	28%	24%
ROTATING EIGHT HOUR	14%	6%
VARIABLE	25%	39%
<hr/>		
TYPES OF RADAR EQUIPMENT MAINTAINED:		
AN/FPS-26 RADAR SET	4%	11%
AN/GPA-26 AMPLIFIER INDICATOR GROUP	14%	22%
AN/MPQ-T2A RADAR SYSTEM	7%	20%
AN/MPS-T1 RADAR TRAINING SETS	20%	20%
AN/MPS-9 RADAR SET	20%	26%
AN/MSQ-2 RADAR SYSTEM	16%	17%
AN/MSQ-77 RADAR SYSTEM	26%	26%
AN/UPX-6 INTERROGATOR SET	16%	17%

ANALYSIS OF MAJOR COMMAND DIFFERENCES

An analysis of the tasks and duties performed by MAJCOM groups can highlight important differences. In many specialties, the jobs performed by various groups of personnel differs little across MAJCOMs, however, this is not the case with the 303X3 specialty. The seven largest users of 303X3 personnel (AFSC, SAC, AFCC, PACAF, TAC, ATC and ESC) were examined, and four MAJCOMs had personnel performing distinguishing tasks. In other words, the jobs performed by 303X3 personnel assigned to SAC, AFCC, PACAF, and ATC are somewhat different than the jobs performed by the personnel in the other MAJCOMs.

Given below are brief job descriptions concerning the four "unique" users of 303X3 personnel. In addition, four tables at the end of this section provide job and background information for each of the seven MAJCOM groups identified above. For an overall view of how the jobs vary among MAJCOM groups, Table 22 reveals the relative percent of job time spent performing duties. For example, ESC personnel spend 24 percent of their job time performing operations functions, and 21 percent of their time performing general and preventative maintenance. Table 23 lists representative tasks which best differentiate the four "unique" MAJCOM groups, and seems to reflect many of the job trends identified in Table 22. For example, operational tasks involving RBS, such as confirming RBS scores and recording bomb away times are performed by substantially higher percentages of SAC personnel. Table 24 lists various types of background information for MAJCOM groups, and reveals that 90 percent of AFSC personnel hold the 5- or 7-skill level, 75 percent work a day shift, and 30 percent are in their first enlistment. Finally, Table 25 reveals various job satisfaction and related data for each MAJCOM group. ESC personnel appear to be the most satisfied, with 83 percent finding their job interesting and 63 percent planning to reenlist.

SAC

SAC personnel make up a majority of the personnel assigned to the 303X3 career ladder. These incumbents are differentiated by the large percentage of job time (32 percent) they spend performing operations functions. These respondents are responsible for providing strategic RBS and EW missions for SAC bomber crews. Differentiating tasks performed by these incumbents include computing ECM mission scores, adjusting bomb tone circuitry, or measuring autorange or autoangles. A review of background information reveals that at least 20 percent of these personnel maintain the AN/MPS-T1, the AN/MSQ-77, and the AN/UPX-6 radars or radar systems.

AFCC

Only 11 incumbents identified themselves as belonging to this MAJCOM, and Table 22 reveals maintaining range and angle tracking systems and computer systems are the two duties in which these personnel spend substantially more job time performing than other MAJCOM personnel. Table 23 reflects the same job trends, with tasks such as adjusting track range computers, performing altimeter checks, or aligning A scan indicators being

performed by substantially higher percentages of AFCC personnel. A review of background data reveals 54 percent of these incumbents are in their first enlistment, 73 percent maintain the AN/MSQ-77, and 55 percent maintain the AN/TSQ-81. Table 25 reveals these respondents are somewhat dissatisfied with their job, with only 37 percent finding their job interesting. Finally, the data presented for AFCC personnel must be used with caution, since there are only 11 of these respondents, and the chances for error are somewhat increased when dealing with such a small sample.

PACAF

PACAF personnel are noted for the relatively large percentage of job time they spend performing radar system installation and removal functions (seven percent) and general and preventive maintenance (24 percent). The differentiating tasks performed by these incumbents all involve radar installation and removal, and include installing autotrack antenna assemblies, preparing areas of site installations, and loading or offloading equipment on trucks or aircraft. Table 24 reveals these incumbents perform on average of 125 tasks, 67 percent hold the 5-skill level, and 41 percent maintain the AN/MPS-T1.

ATC

ATC personnel perform somewhat of a different job in that these incumbents spend very little job time performing radar maintenance or operations functions. Instead, these respondents spend a majority of their job time performing training related tasks. These personnel are responsible for conducting the 303X3 resident course classroom training currently held at Keesler AFB MS. Differentiating tasks performed by these instructors include conducting resident course classroom training, preparing lesson plans, or developing training aids. A review of available background information reveals these incumbents perform an average of 40 tasks, and 42 percent hold the 7-skill level. Overall, ATC personnel are among the most satisfied, with 68 percent finding their job interesting and 89 percent perceiving their training is being utilized at least fairly well.

Summary

The jobs performed by 303X3 can vary considerably depending on the MAJCOM assigned. Four of the seven MAJCOMs in which 303X3 personnel are assigned were found to be performing relatively distinct tasks. SAC personnel seem to be involved with radar bomb scoring (RBS). AFCC personnel were more likely to maintain range and angle tracking systems and computer systems, although some caution must be used because of their small sample size. PACAF personnel seem to be actively involved with radar system installation and removal. Finally, ATC personnel are responsible for conducting 303X3 resident course classroom training. Overall, AFSC personnel appear to be the least satisfied, ESC personnel the most satisfied, and SAC, AFCC, PACAF, TAC, and ATC personnel fall somewhere in between.

TABLE 22

RELATIVE PERCENT TIME SPENT ON DUTIES BY 303X3 MAJOR COMMAND GROUPS

DUTIES	AFSC (N=20)	SAC (N=352)	AFCC (N=11)	PACAF (N=27)	TAC (N=220)	ATC (N=19)	ESCC (N=6)
ORGANIZING AND PLANNING	3	3	7	3	6	4	3
DIRECTING AND IMPLEMENTING	9	3	6	3	6	6	2
INSPECTING AND EVALUATING	12	6	11	4	7	4	2
TRAINING	2	4	3	2	4	57	3
PERFORMING ADMINISTRATIVE AND SUPPLY FUNCTIONS	6	5	8	12	12	7	7
PERFORMING OPERATIONS FUNCTIONS	19	32	14	6	15	7	24
PERFORMING SITE SUPPORT FUNCTIONS	3	2	2	3	6	*	4
PERFORMING RADAR SYSTEM INSTALLATION AND REMOVAL FUNCTIONS	3	2	*	7	5	*	5
PERFORMING GENERAL AND PREVENTIVE MAINTENANCE	20	15	15	24	18	2	21
MAINTAINING POWER AND DISTRIBUTION EQUIPMENT	1	2	2	4	3	1	2
MAINTAINING TIMING SYSTEMS	*	*	*	*	1	*	*
MAINTAINING TRANSMITTER SYSTEMS	8	5	4	11	4	3	7
MAINTAINING ANTENNA SYSTEMS	3	3	2	5	3	*	7
MAINTAINING RECEIVER SYSTEMS	3	3	3	5	2	2	2
MAINTAINING DISPLAY EQUIPMENT	*	*	4	6	1	1	1
MAINTAINING REMOTE EQUIPMENT	*	*	*	*	*	*	2
MAINTAINING ANCILLARY EQUIPMENT	2	1	3	1	*	*	3
MAINTAINING IDENTIFICATION FRIEND OR FOE (IFF) AND SELECTIVE IDENTIFICATION FEATURE (SIF) EQUIPMENT	*	1	1	1	*	*	*
MAINTAINING RANGE AND ANGLE TRACKING SYSTEMS	1	3	7	2	2	1	2
MAINTAINING COMPUTER SYSTEMS	2	2	6	6	2	3	3

* DENOTES LESS THAN ONE PERCENT

TABLE 23
REPRESENTATIVE TASKS WHICH BEST DIFFERENTIATE MAJOR COMMAND GROUPS
(PERCENT MEMBERS PERFORMING)

TASKS	AFSC PERSONNEL	SAC PERSONNEL	AFFC PERSONNEL	PACAF PERSONNEL	TAC PERSONNEL	ATC PERSONNEL	ESC PERSONNEL
ANNOTATE PLOTTING PAPER WITH RADAR BOMB SCORING (RBS) MISSION DATA	-	31	9	-	-	-	-
COMPUTE ECM MISSION SCORES	-	31	-	7	5	-	-
CONFIRM RBS SCORES	-	34	-	-	1	-	-
MEASURE AUTORANGE OR AUTOANGLES	-	36	-	-	1	-	-
RECORD BOMBS AWAY TIMES	15	40	-	-	-	-	-
ADJUST BOMB TONE CIRCUITRY	10	32	9	4	-	-	-
PERFORM ALTIMETER CHECKS	-	29	64	-	1	5	-
PERFORM BEACON DELAY CALIBRATOR CHECKS	20	15	64	4	1	16	-
ALIGN A SCAN INDICATORS	30	23	64	33	26	21	-
ADJUST TRACK RANGE COMPUTERS	25	35	55	15	18	16	-
ALIGN COMPUTER SERVO MECHANICS	5	21	36	-	1	11	-
ALIGN RECORD PRINTERS	5	6	18	-	-	5	-
ISOLATE DRC MALFUNCTIONS	-	1	36	-	-	5	17
DRIVE HEAVY DUTY VEHICLES, SUCH AS 1½ TON TRUCKS OR 10 TON TRACTOR-TRAILER COMBINATIONS	25	9	-	56	26	-	17
INSTALL OR DISASSEMBLE AUTOTRACK ANTENNA ASSEMBLIES	10	20	-	56	37	-	33
LOAD OR OFFLOAD EQUIPMENT ON TRUCKS OR AIRCRAFT	20	10	-	37	21	-	-
PACK OR UNPACK SUPPORT EQUIPMENT FOR SHIPMENT	20	12	-	30	18	-	17
PREPARE AREAS FOR SITE INSTALLATIONS	5	3	-	30	15	17	-
SURVEY SITE RADAR LOCATIONS OR CALIBRATION TARGETS	-	1	-	15	-	5	-
ADMINISTER TESTS	-	11	9	-	6	84	-
CONDUCT RESIDENT COURSE CLASSROOM TRAINING	5	4	9	-	3	79	-
DEVELOP TRAINING AIDS	5	11	9	4	6	68	-
EVALUATE PROGRESS OR RESIDENT COURSE STUDENTS	-	2	9	-	2	63	-
PREPARE LESSON PLANS	5	9	-	4	5	89	17
SCORE TESTS	-	9	9	-	4	89	-

TABLE 24

BACKGROUND INFORMATION FOR 303X3 MAJOR COMMAND GROUPS

	AFSC PERSONNEL	SAC PERSONNEL	AFCC PERSONNEL	PACAF PERSONNEL	TAC PERSONNEL	ATC PERSONNEL	ESC PERSONNEL
AVERAGE NUMBER OF TASKS PERFORMED:	96	126	1285	125	94	40	172
AVERAGE PAYGRADE:	E-4, E-5	E-4, E-5	E-4, E-5	E-4, E-5	E-4	E-5	E-5
DAFSC:							
30333	10%	11%	18%	11%	24%	5%	-
30353	50%	63%	55%	67%	57%	53%	33%
30373	40%	26%	27%	22%	19%	42%	67%
30399	-	-	-	-	-	-	-
AVERAGE NUMBER OF PERSONNEL SUPERVISED:	1	1	1	1	1	2	1
AVERAGE MONTHS TAFMS:	91	84	104	90	64	100	114
PERCENT IN FIRST ENLISTMENT:	30%	45%	54%	37%	61%	42%	-
PERCENT LOCATED IN CONUS:	100%	85%	100%	-	99%	100%	-
WORK SHIFT:							
DAY	75%	29%	55%	33%	30%	53%	-
ROTATING EIGHT HOUR	-	19%	-	4%	-	-	-
VARIABLE	20%	19%	9%	30%	37%	5%	100%
TYPE OF EQUIPMENT MAINTAINED:							
AN/MPS-T1 RADAR/TRAINING SETS	-	20%	-	41%	28%	-	-
AN/MSQ-77 RADAR SYSTEMS	-	34%	73%	11%	9%	10%	-
AN/TSQ-81 RADAR SYSTEMS	-	3%	55%	3%	3%	10%	-
AN/UPX-6 INTERROGATOR SETS	-	22%	64%	4%	2%	6%	-
TAPE RECORDERS	10%	4%	-	7%	3%	-	33%
"OTHER" EQUIPMENT	40%	5%	-	26%	18%	-	67%

TABLE 25

JOB SATISFACTION FOR 303X3 MAJOR COMMAND GROUPS
(PERCENT MEMBERS RESPONDING)

	<u>AFSC PERSONNEL</u>	<u>SAC PERSONNEL</u>	<u>AFCC PERSONNEL</u>	<u>PACAF PERSONNEL</u>	<u>TAC PERSONNEL</u>	<u>ATC PERSONNEL</u>	<u>ESC PERSONNEL</u>
<u>I FIND MY JOB:</u>							
NO RESPONSE	-	1	9	-	1	-	-
DULL	20	24	27	18	19	16	17
SO-SO	25	18	27	18	24	16	-
INTERESTING	55	57	37	64	56	68	83
<u>MY JOB UTILIZES MY TALENTS:</u>							
NO RESPONSE	-	1	-	-	1	-	-
NOT AT ALL TO VERY LITTLE	45	35	27	26	30	16	17
FAIRLY WELL OR BETTER	55	64	73	74	69	84	83
<u>MY JOB UTILIZES MY TRAINING:</u>							
NO RESPONSE	-	1	-	-	1	-	-
NOT AT ALL TO VERY LITTLE	60	33	27	26	34	11	33
FAIRLY WELL OR BETTER	40	66	73	74	65	89	67
<u>I PLAN TO REENLIST:</u>							
NO RESPONSE	-	-	-	-	-	-	-
NO, PLANNING TO RETIRE	15	7	18	-	3	5	37
NO OR PROBABLY NO	40	49	36	44	56	50	45
YES OR PROBABLY YES	45	44	46	56	41	45	63

TRAINING ANALYSIS

Occupational survey data is just one of the many sources of information which can be used to help make training programs more meaningful and relevant to students. Factors provided in occupational surveys which may be used in evaluating training are the percent of first enlistment members performing task(s), utilization of equipment available at the technical school for training, and task difficulty ratings. These factors can be used in evaluating the Specialty Training Standard (STS) and Plan of Instruction (POI) for the 303X3 specialty. Technical school personnel at Keesler AFB MS matched inventory tasks to areas of instruction outlined in the STS, dated April 1978, and the POI for course 3ABR30333, dated March 1980. A complete computer listing of the percent members performing and task difficulty ratings for each task statement along with the STS and POI matching has been forwarded to the technical school for their use in reviewing training documents. A summary of that information is described below.

Analysis of Task Difficulty

The relative difficulty of each task in the task inventory was assessed through ratings of 37 experienced 7- and 9-skill level Automatic Tracking Radar NCOs. These tasks were processed to produce an ordered listing of all tasks in terms of their relative difficulty and were standardized to have an average difficulty of 5.0 (standard deviation equals 1.0). It is important to note that this task difficulty task listing is somewhat different than the task listing presented in AFPT 90-303-400, Volume I. The task difficulty analysis in this report uses only the ratings from 303X3 task difficulty raters, while the AFPT 90-303-400, Volume I training analysis utilizes the combined ratings from the personnel in three specialties (AFSs 303X1, 303X2, and 303X3). Because the personnel in different specialties may view the difficulty of tasks somewhat differently than the personnel in another specialty, it is important to use only specialty specific raters when analyzing specialty specific documents, such as the STS or POI. Therefore, the analysis of task difficulty, and the analysis of the 303X3 STS and POI will only use the ratings of 303X3 personnel. (For a more complete description of these ratings, see the Task Factor Administration section in the INTRODUCTION.)

In order to help insure that the 303X3 raters reflect the same perceptions as the rest of the career ladder concerning task difficulty, it is necessary that a representative sample of task difficulty raters be obtained. Table 26 reveals the major command distribution of the task difficulty raters versus the same distribution of all the personnel assigned to the 303X3 specialty, and reveals a representative sample of task difficulty raters. Having a representative sample is extremely important, especially when the personnel in different major commands utilize or maintain different types of equipment, because a large overrepresentation of one major command may lead to spurious task difficulty ratings. This was not the case with 303X3 task difficulty ratings.

Table 27 lists those tasks rated the most difficult by 303X3 task difficulty raters. Most of the tasks are maintenance oriented, and involve isolating malfunctions on or installing various types of radar or ancillary

equipment. However, the tasks typically rated the most difficult do not seem to involve isolating malfunctions, but instead includes designing circuitry, installing long range search radar systems, installing height finding radar systems, or installing radar turntables. Overall, very few of the most difficult tasks are performed by more than 20 percent of the total 303X3 sample.

In order to determine some of the more difficult tasks that 303X3 personnel commonly perform, Table 28 is provided. Table 28 lists those tasks rated above average in difficulty and performed by at least 15 percent of the total 303X3 sample. Isolating or aligning various types of radar equipment, such as isolating track range computer malfunctions, aligning trade range computers, isolating high power servo amplifier malfunctions, or isolating magnetron transmitter malfunctions are typical of the tasks which 303X3 personnel perceive as above average in difficulty and commonly perform.

Most of the tasks rated average in difficulty are also maintenance oriented, but involve adjusting, removing or replacing components of, or performing PMIs on different types of radar or ancillary equipment (see Table 29). Some of these tasks include adjusting crystal mixers, replacing frequency discriminators, orienting antennas, or performing PMIs on timing equipment. Generally, a greater percentage of 303X3 personnel perform tasks of average difficulty than the tasks rated the most difficult.

Table 30 lists the tasks rated the least difficult by senior 303X3 personnel. Generally, these tasks involve routine maintenance or routine radar operations functions, and include performing general housekeeping procedures, cleaning moisture filters, recording bomb away times, or recording range departure times. As expected, most of the tasks rated the least difficult were performed by large percentages of 303X3 personnel.

Analysis of the 303X3 Specialty Training Standard (STS)

The 303X3 Specialty Training Standard (STS), dated April 1978, was reviewed for first enlistment (1-48 months TAFMS) and 5- and 7-skill level Automatic Tracking Radar personnel. Subject matter specialists at the Keesler Technical Training Center assisted in the analysis by matching job inventory tasks to specific paragraphs in the STS. Each paragraph in the STS was analyzed using task difficulty and percent members performing vectors to determine if the paragraph had job inventory justification for being in the STS. Paragraphs which required specific task knowledge and task performance criteria were examined with matched job inventory tasks and task difficulty and percent members performing information to determine whether the paragraph actually belongs in the STS. For the 303X3 specialty, the STS was found to give a broad overview of the career ladder, and all STS paragraphs appear to be well justified based on occupational data.

Analysis of the 30333 Plan of Instruction (POI)

The Plan of Instruction (POI) for course 3ABR30333, dated March 1980, was also reviewed for first job (1-24 months TAFMS), first enlistment (1-48 months TAFMS) and second enlistment (49-96 months TAFMS) groups. As with the STS, subject matter specialists at the Keesler Technical Training Center also assisted in the analysis by matching job inventory tasks to specific criterion objectives in the 3ABR30333 POI. In addition, each criterion objective was examined based on task difficulty and percent members performing information to determine if the survey data supports the basic 3ABR30333 course. Overall, the course is well supported by job inventory data, and no changes are recommended. In addition, computer printouts were provided to technical school personnel for their use in future refinements in either the STS or POI.

TABLE 26
MAJOR COMMAND REPRESENTATION OF 303X3 TASK DIFFICULTY RATERS
(N=37)

<u>MAJOR COMMAND</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF TASK DIFFICULTY RATERS</u>
AFCC	1	5
ATC	3	*
SAC	50	49
TAC	28	19
USAFE	2	3
PACAF	4	3
AFSC	3	11
AAC	1	*
OTHER	8	10
TOTAL	100	100

* DENOTES LESS THAN ONE PERCENT

TABLE 27
REPRESENTATIVE TASKS RATED THE MOST DIFFICULT BY 303X3
TASK DIFFICULTY RATERS

TASKS	TASK DIFFICULTY	PERCENT OF 303X3 PERSONNEL PERFORMING (N=661)
DESIGN CIRCUITRY	8.31	2
INSTALL OR DISASSEMBLE LONG RANGE SEARCH RADAR SYSTEMS	7.52	*
INSTALL OR DISASSEMBLE HEIGHT FINDING RADAR SYSTEMS	7.37	*
INSTALL OR DISASSEMBLE RADAR TURNTABLES	7.37	1
ISOLATE TRACK RANGE COMPUTER MALFUNCTIONS	7.28	20
ISOLATE MULTIPLEXER MALFUNCTIONS	7.18	*
DEVELOP TRAINING COURSE OR CAREER DEVELOPMENT COURSE (CDC) CURRICULUM MATERIALS	7.08	2
ISOLATE ANALOG MTI RECEIVER MALFUNCTIONS	7.04	1
REMOVE OR REPLACE ANTENNA SLIP RING ASSEMBLIES	6.99	13
ISOLATE ANALOG TO DIGITAL CONVERTER MALFUNCTIONS	6.99	6
ISOLATE INTEGRATOR CALIBRATOR MALFUNCTIONS	6.98	3
INSTALL OR DISASSEMBLE PRECISION APPROACH RADAR SYSTEMS	6.94	*
ISOLATE DEMULTIPLEXER MALFUNCTIONS	6.93	*
INSTALL OR DISASSEMBLE REMOTE MICROWAVE LINK ANTENNAS	6.92	*
ISOLATE DIGITAL MTI RECEIVER MALFUNCTIONS	6.90	2
ESTABLISH HOST TENANT SUPPORT AGREEMENTS	6.88	3
ISOLATE FREQUENCY DISCRIMINATOR MALFUNCTIONS	6.86	4
ISOLATE DIGITAL HEIGHT COMPUTER AND EVALUATION SYSTEM MALFUNCTIONS	6.86	1
ISOLATE IFF/SIF IDP MALFUNCTIONS	6.85	*
INSTALL OR DISASSEMBLE PRECISION ELEVATION OR AZIMUTH ANTENNA ASSEMBLIES	6.48	3
INSTALL OR DISASSEMBLE RANGE HEIGHT INDICATOR SYSTEMS	6.82	*
ISOLATE RANGE AND ANGLE TRACK RECEIVER MALFUNCTIONS	6.80	16
ISOLATE RECORD PRINTER MALFUNCTIONS	6.78	4

* DENOTES LESS THAN ONE PERCENT

TABLE 28

TASKS RATED ABOVE AVERAGE IN DIFFICULTY AND PERFORMED BY
AT LEAST 15 PERCENT OF 303X3 PERSONNEL

<u>TASKS</u>	<u>TASK DIFFICULTY</u>	<u>PERCENT OF 303X3 PERSONNEL PERFORMING (N=661)</u>
ISOLATE TRACK RANGE COMPUTER MALFUNCTIONS	7.28	20
ISOLATE RANGE AND ANGLE TRACK RECEIVER MALFUNCTIONS	6.80	16
ALIGN TRACK RANGE COMPUTERS	6.72	26
ISOLATE PLOTTING BOARD MALFUNCTIONS	6.59	17
ISOLATE PULSE DEMODULATOR MALFUNCTIONS	6.58	18
PREPARE APRs	6.54	29
ISOLATE AFC CIRCUIT MALFUNCTIONS	6.48	29
ISOLATE HIGH POWER SERVO PREAMPLIFIER MALFUNCTIONS	6.44	15
ISOLATE HIGH POWER SERVO AMPLIFIER MALFUNCTIONS	6.39	18
ISOLATE RECEIVER LOCAL OSCILLATOR MALFUNCTIONS	6.38	20
ISOLATE LOW POWER SERVO AMPLIFIER MALFUNCTIONS	6.37	18
ISOLATE IF AMPLIFIER OR PREAMPLIFIER MALFUNCTIONS	6.34	18
ISOLATE ANTENNA SERVO DRIVE SYSTEM MALFUNCTIONS	6.33	22
ISOLATE TRANSMITTER MODULATOR MALFUNCTIONS	6.31	19
ISOLATE CRYSTAL MIXER MALFUNCTIONS	6.30	18
ISOLATE ELEVATION OR AZIMUTH ANTENNA MALFUNCTIONS	6.26	20
ALIGN INTERMEDIATE FREQUENCY (IF) AMPLIFIERS OR PREAMPLIFIERS	6.21	15
ALIGN AZIMUTH DATA CONVERTERS	6.18	19
ISOLATE MAGNETRON TRANSMITTER MALFUNCTIONS	6.15	24
ISOLATE ANTENNA POSITION CONTROL UNIT MALFUNCTIONS	6.14	16
ISOLATE A SCAN INDICATOR MALFUNCTIONS	6.10	19
CONDUCT OPERATIONAL TESTS OF NEWLY INSTALLED EQUIPMENT	6.10	16
WRITE CORRESPONDENCE	6.06	17
ALIGN ELEVATION DATA GENERATORS OR CONVERTERS	6.05	16
ALIGN RANGE AND ANGLE TRACK RECEIVERS	6.02	17

TABLE 29
REPRESENTATIVE TASKS RATED AVERAGE IN DIFFICULTY BY 303X3
TASK DIFFICULTY RATERS

TASKS	TASK DIFFICULTY	PERCENT OF 303X3 PERSONNEL PERFORMING (N=661)
INSTALL OR DISASSEMBLE PLAN POSITION INDICATOR SYSTEMS	5.07	6
BORESIGHT ANTENNAS	5.07	31
ALIGN INDICATOR SWEEP GENERATORS	5.07	22
CONSTRUCT TEST EQUIPMENT JIGS	5.06	12
SUPERVISE AUTOMATIC TRACKING RADAR TECHNICIANS (AFSC 30373)	5.06	12
CONSTRUCT COMBAT AREA HUMAN SAFETY FACILITIES	5.06	*
RESEARCH TECHNICAL PUBLICATIONS	5.06	26
PERFORM INPROCESS INSPECTIONS	5.06	5
ISOLATE MAGNETRON AIR COOLING SYSTEM MALFUNCTIONS	5.05	13
ELEVATE OJT TRAINERS OR TRAINEES	5.04	17
EVALUATE ADMINISTRATIVE FORMS, FILES, OR PROCEDURES	5.03	6
ADJUST CRYSTAL MIXERS	5.01	26
ADJUST TRIGGER OR PULSE DIGITAL SYNCHRONIZERS	5.00	7
INSTALL OR DISASSEMBLE BORESIGHT TOWERS	5.00	3
REMOVE OR REPLACE FREQUENCY DISCRIMINATORS	4.99	3
PERFORM PMIs ON TIMING EQUIPMENT	4.98	17
ORIENT ANTENNAS	4.98	18
ADJUST PRECISION BLANKER SWITCHES	4.97	1
FABRICATE MINICOAXIAL CABLES	4.97	8
COMPUTE BALLISTICS INFORMATION	4.96	15
MAINTAIN PLANT-IN-PLACE RECORDS	4.96	2
TEST PROGRAMS IN RADAR COMPUTERS	4.95	5
REMOVE OR REPLACE ANTIJAM ANTENNA SYSTEM SUBASSEMBLIES	4.95	*
ERECT MOBILE RADAR ANTENNAS	4.95	19
ADJUST B SCAN INDICATORS	4.94	19

* DENOTES LESS THAN ONE PERCENT

TABLE 30
REPRESENTATIVE TASKS RATED THE LEAST DIFFICULT BY 303X3
TASK DIFFICULTY RATERS

<u>TASKS</u>	<u>TASK DIFFICULTY</u>	<u>PERCENT OF 303X3 PERSONNEL PERFORMING (N=661)</u>
PERFORM GENERAL HOUSEKEEPING PROCEDURES	1.85	51
PERFORM AREA BEAUTIFICATION	1.86	50
CLEAN OR REPLACE AIR OR MOISTURE FILTERS	1.98	42
INSTALL PAPER ON TELETYPE	2.12	12
RECORD BOMB AWAY TIMES	2.22	22
RECORD RANGE DEPARTURE TIMES	2.23	16
LUBRICATE VAN OR TRAILER CHASSIS	2.24	27
LUBRICATE MECHANICAL BEARING SURFACES	2.29	31
REMOVE OR REPLACE FUSES OR FUSE HOLDERS	2.30	57
LOG RADAR CALIBRATION CHECKS	2.31	15
INSTALL OR REMOVE PORTABLE LATRINES	2.34	4
REMOVE OR REPLACE ELECTRON TUBES	2.46	44
DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES	2.55	56
ANNOTATE AIRCRAFT POSITION DATA ON PLAN POSITION INDICATORS	2.61	5
SET TIMING DEVICES	2.62	11
PITCH OR STRIKE TENTS	2.65	2
ADVISE RADAR OPERATORS OR AIRCREWS OF RUN TERMINATIONS	2.66	16
ADVISE OTHER CREW POSITIONS OF AUTOMATIC RADAR LOCK-ONS	2.67	21
PERFORM OPERATIONAL CHECKS OF INTERCOM SYSTEMS	2.69	19
INSTALL OR REMOVE SHELTER OR VAN ACCESSORIES, SUCH AS WALKWAYS, LADDERS, OR STEPS	2.74	17
ANNOTATE COMMUNICATOR RECORDER TAPES	2.74	10
PERFORM CORROSION CONTROL ON EQUIPMENT VANS OR TRAILERS	2.74	43
ADMINISTER TESTS	2.78	10

COMPARISON TO PREVIOUS SURVEY

The results of this 303X3 survey were compared to those of a previous 303X3 Occupational Survey Report, AFPT 90-303-252 dated November 1977. This analysis can help identify job and satisfaction changes in the career ladder, in addition to identifying changes due to changing management policies, new operational equipment, etc. Generally, the two studies reported relatively consistent findings, with differences appearing in the following areas:

A thorough analysis of the tasks and jobs performed and job satisfaction data for various enlistment (first, second, and career) groups reveal some interesting trends. While the tasks and jobs performed by these enlistment groups have changed little over the last four years, some job satisfaction indicators have. Table 31 reveals slightly higher percentages of 1981 first enlistment personnel find their job interesting, plan to reenlist, etc. than comparative 1977 personnel. Second enlistment personnel from both studies exhibit the same general trends, with approximately the same percentages planning to reenlist, finding their job interesting, etc. Finally, it appears that 1977 career personnel found their job somewhat more satisfying than 1981 career personnel, with somewhat higher percentages of 1977 career personnel finding their job interesting and planning to reenlist.

A review of the 303X3 career ladder structure reveals some job changes have occurred in the last four years. Table 32 lists the 1977 major job groups and their equivalent 1981 clusters, independent job types, or job types. Table 32 reveals that several 1977 jobs, such as SGLS Personnel and MCGS Personnel were not identified in the current report. The SGLS Personnel were not identified because their satellite mission has been taken over by the 316X3 Instrumentation specialty. The 303X3 drone control functions performed by MCGS Personnel has been phased down, and very few if any, 303X3 personnel still perform these functions. However, while some jobs may have changed since 1977, overall the career ladder has remained fairly stable, with most of the same jobs still being performed.

TABLE 31
 A COMPARISON OF JOB SATISFACTION DATA FOR ENLISTMENT GROUPS
 IDENTIFIED IN THE 1977 AND 1981 OSR
 (PERCENT MEMBERS RESPONDING)

	FIRST ENLISTMENT PERSONNEL		SECOND ENLISTMENT PERSONNEL		CAREER PERSONNEL	
	1977	1981	1977	1981	1977	1981
JOB INTEREST:	53	55	54	53	70	61
UTILIZATION OF TALENTS:	62	66	71	64	72	70
UTILIZATION OF TRAINING:	59	65	59	67	63	63
REENLISTMENT INTENTIONS:	34	40	47	54	80	64

TABLE 32

A COMPARISON OF JOBS IDENTIFIED IN THE 1977 AND 1981 OSRs

<u>CLUSTERS OR INDEPENDENT JOB TYPES IDENTIFIED IN THE 1977 OSR</u>	<u>EQUIVALENT CLUSTERS, INDEPENDENT JOB TYPES OR JOB TYPES IDENTIFIED IN THE 1981 OSR</u>
RBS PERSONNEL	RBS CREW MEMBERS
MOBILE SITE PERSONNEL	MOBILE INSTALLATION PERSONNEL, AN/MPS-T1 MAINTENANCE PERSONNEL, OPERATIONS MAINTENANCE PERSONNEL
GENERAL EW PERSONNEL	
RBS OPERATOR PERSONNEL	OPERATIONS CREW MEMBERS
RBS/GDB PERSONNEL	-
AN/MPS-T1 OPERATOR PERSONNEL	ATR OPERATORS
SGLS PERSONNEL	-
MCGS PERSONNEL	-
MAINTENANCE CONTROL PERSONNEL	JOB CONTROL PERSONNEL
MAINTENANCE MANAGERS	RADAR MAINTENANCE SUPERVISORS, ATR WORK-CENTER SUPERVISORS, QC PERSONNEL
TRAINING PERSONNEL	RESIDENT COURSE INSTRUCTORS
OPERATIONS MANAGERS	OPERATIONS/ANALYSIS NCOICs
RBS ANALYSTS AND PLOTTERS	OPERATIONS ANALYSTS

IMPLICATIONS

The Automatic Tracking Radar career ladder is fairly heterogeneous, with a wide variety of jobs performed by 303X3 personnel. The majority of these personnel were performing a radar maintenance, operations, or a combination of maintenance and operations type of job. The remainder of the personnel were performing a nontechnical job involving administration, supervision, or training.

An issue that came up in a previous Occupational Survey Report and that also surfaces in this report involves operators versus maintainers. A substantial percentage of incumbents in the 303X3 specialty perform a radar operations oriented job rather than a radar maintenance job. The personnel in these operator oriented jobs are typically less satisfied with their job than maintenance personnel. This may be due to the fact that incumbents entering the career ladder expect to perform an electronics oriented job, while the operator's job involves very little electronics. AF managers and supervisors need to look at the feasibility of manning these operator positions with an operator oriented AFSC, such as 276X0 or 276X2. Given the proper training in automatic tracking radar fundamentals and operations, 276XX personnel would probably be able to operate the automatic tracking radar equipment. This would probably increase overall job satisfaction for 303X3 personnel, and in addition, may be more cost effective for the Air Force. This may save the Air Force money because 303X3 personnel must have fairly high AQE scores in electronics in order to enter the 303X3 specialty, and by making these personnel primarily radar maintainers, a more efficient use of manpower and their associated skills could be made.

Some disadvantages could occur if the operator slots were manned by an operator AFSC. One argument presented states that in order to operate an automatic tracking radar, an incumbent needs to be experienced in the maintenance aspect of the radar. However, this argument loses some credibility since the operator jobs are usually manned by younger, less experienced 303X3 personnel. However, some more credible disadvantages exist. First, an additional course would need to be created in order to properly train the operator AFSC personnel in automatic tracking radar operations. In addition, managers would be faced with having to manage two career ladders to perform the automatic tracking mission instead of one. Finally, the 303X3 authorized manning would be reduced, which would have the effect of making a relatively small career ladder even smaller.

An interesting phenomenon in this career ladder involves first enlistment personnel. These incumbents make up approximately 50 percent of the total career ladder, which is a much higher percentage than that found in the other two radar maintenance specialties (AFSCs 303X1 and 303X2). Fortunately, reenlistment intentions for 303X3 first enlistment personnel are somewhat higher than those reported by individuals in related career fields. This probably means that the overall experience level in this career ladder should increase relative to related career ladders in the future. Experience levels could possibly get even greater if the operator oriented jobs were removed from the ladder, since these jobs are normally filled by first enlistment personnel, and these incumbents are among the most dissatisfied in the career ladder. Putting these personnel in maintenance oriented jobs would probably increase their overall job satisfaction and consequently increase their reenlistment intentions, which would in turn raise the overall experience level of the specialty.

APPENDIX A

Job Type Descriptions

Listed below are brief descriptions of the job types identified in the Automatic Tracking Radar career ladder structure. Generally, the relative heterogeneity of the job types within any one cluster seems to depend on the cluster itself, with some clusters being fairly homogeneous and other clusters having fairly heterogeneous job types. For additional information, the tables in Appendix A reveal various duty, background, and job satisfaction data for all of the job types identified. (For a further explanation of the job types identified, see the CAREER LADDER STRUCTURE section of this report.)

Automatic Tracking Radar (ATR) Personnel

This is a relatively heterogeneous cluster of 11 job types. A number of differentiating factors can be identified to distinguish between the job types, some of which include the percentage of job time spent performing operations or various radar maintenance duties, the average number of tasks performed, the MAJCOM to which assigned, and the types of equipment maintained. ATR IFF/SIF Repairmen are differentiated by the IFF/SIF tasks they perform. In addition, a relatively high percentage of these SAC incumbents maintain the AN/KY-274 IFF coder/decoder and the AN/MPS-9 radar set. A review of job satisfaction data reveals these incumbents are fairly dissatisfied, with only 67 percent perceiving their job utilizes their talents and only 58 percent perceive their training is being utilized at least fairly well. RBS Crew Members are differentiated by the large percentage of time spent (29 percent) performing operations functions. These incumbents are responsible for operating and maintaining the AN/MSQ-77 radar system, which is used to provide SAC bomber crews with RBS and ECM scores. Differentiating tasks performed by these personnel include adjusting altimeters, operating plotting boards, and performing aircraft automatic tracking procedures. ATR IFF/SIF Supervisors perform a job very similar to ATR IFF/SIF Repairmen, except these incumbents perform approximately 75 more tasks and spend more time performing supervisory duties. Forty percent of these SAC incumbents hold the 7-skill level, 47 percent maintain the AN/KY-274 IFF coder/decoder and 87 percent maintain the AN/UPX-6 interrogator set. Differentiating tasks performed by these incumbents are very similar to those performed by ATR IFF/SIF Repairmen, and include aligning IFF coders, aligning IFF transmitters, and isolating IFF/SIF antenna system malfunctions. The single most differentiating factor for Senior ATR Personnel is the relatively high average number of tasks they perform. These incumbents perform an average of 302 tasks, which is about 40 more tasks than any other job type. These respondents supervise an average of two personnel, and typical tasks performed by these incumbents include performing PMIs on range and angle track equipment, supervising Automatic Tracking Radar Specialists (AFSC 30353), or interpreting plans, diagrams, or schematics. Finally, it is interesting to note that the respondents in this job type are among the most satisfied, with 80 percent finding their job interesting and 96 percent perceiving their talents are utilized at least fairly well. AN/MPS-T1 Maintenance Personnel are primarily assigned to SAC and are responsible for providing strategic bomber crews with EW threats. These incumbents work at a variety of SAC locations, and differentiating tasks performed by these performed by these incumbents include replacing TWTs, loading computer programs, and replacing waveguide switches. Mobile Installation Personnel are primarily assigned to

TAC and all hold the 3- or 5-skill level. These incumbents work out of a variety of TAC locations, and seem to have a mobility function. Differentiating tasks performed by these personnel include adjusting B or J scan indicators, installing equipment cabinets, or loading equipment on trucks or aircraft. It is interesting to note that 96 percent of these incumbents are in their first enlistment, and only 30 percent plan to reenlist. TAC ATR Personnel are primarily working out of Nellis AFB NV and are responsible for providing tactical EW threats in support of Red Flag Missions. Eighty-three percent of these incumbents are in their first enlistment, and tasks which best distinguish these incumbents include aligning track range computers, aligning high power servo amplifiers, or identifying tracked aircraft. Fifty percent of Communications Maintenance Personnel are assigned to ESC, and only 40 percent are assigned to CONUS locations. These incumbents are differentiated by the radio type tasks they perform, such as performing operational checks of intercom systems, installing radio antennas, replacing communication console subassemblies, or removing audio recording system subassemblies. These respondents appear to be fairly satisfied with their job, with 90 percent finding their job interesting and 80 percent perceiving their talents are being utilized at least fairly well. Fixed Threat Radar Crew Members are differentiated due to the large percentages of job time they spend performing preventive maintenance (34 percent) and maintaining transmitter systems (17 percent). These incumbents are the most senior (averaging 113 months TAFMS) and 60 percent report maintaining the AN/MPS-T1 radar training set while 47 percent maintain the AN/TLQ-11 ground based jammer. Tasks involving transmitters and magnetrons best differentiate these incumbents, and include aligning magnetron transmitter filaments, adjusting magnetron liquid cooling systems, or replacing frequency discriminators. A-Scan Indicator Repairmen spend 42 percent of their job time performing operations functions or maintaining range and angle tracking systems. Fifty percent of these incumbents are assigned to TAC, and 56 percent operate and maintain the AN/MSQ-77 radar system. These incumbents perform relatively distinct tasks involving A-scan indicators or servo amplifiers, such as aligning A-scan indicators, aligning high power servo amplifiers, or replacing low power servo amplifiers. Most of these personnel (75 percent) are in their first enlistment and are relatively dissatisfied, with only 44 percent finding their job interesting and 38 percent planning to reenlist. Finally, B-Scan Indicator Repairmen seem to have a mobile mission involving B-scan indicators. All of these incumbents work out of Nellis AFB NV and 73 percent maintain the AN/MPS-T1 radar training set. Differentiating tasks performed by these incumbents include adjusting B-scan indicators, performing PMIs on vans or trailers, or loading computer programs. It is interesting to note that 96 percent of these incumbents are in their first enlistment, and only 37 percent find their job interesting and only 32 percent plan to reenlist. (For more information about these job types see Tables I, II, and III.)

Job Control Personnel

There are three job types within this cluster, and personnel from all career ladders sampled (303X1, 303X2, and 303X3) can be found in each of the job types. These job types are fairly homogeneous, with all three job types spending similar amounts of time performing the same types of duties. Differentiating factors for these job types include the amount of time spent on

supervisory and administrative duties, and the average number of tasks performed. Firstline Job Controllers seem to be the firstline supervisors in a job control shop. These incumbents supervise an average of two personnel, spend 37 percent of their job time on supervisory duties, and perform an average of 28 tasks. Typical tasks for these incumbents include determining work priorities, issuing job control numbers, or preparing APRs. Job Controllers spend similar amounts of time on both supervisory and administrative duties as the above job type, but perform a substantially lower average number of tasks (18). Typical tasks performed by these incumbents include establishing maintenance schedules, preparing briefings, and maintaining status boards, graphs, or charts. Junior Job Controllers are differentiated by the low average number of tasks they perform (eight) and by the large amount of time spent (60 percent) performing administrative and supply functions. These incumbents perform a very narrow and limited job, and typical tasks include preparing job/status document forms and issuing job control numbers. Unsurprisingly, these incumbents have extremely poor job satisfaction indicators, with only 37 percent finding their job interesting and 16 percent believing their training is being utilized at least fairly well. (For more information about these job types see Tables IV, V, and VI.)

Radar Maintenance Supervisors

There are five fairly homogeneous job types in this cluster. The differentiating factors for these job types seem to be the average number of tasks performed and the amount of time spent performing operations or supervisory duties. Operations/Analysis NCOICs are all 303X3 personnel, and 92 percent are assigned to SAC. These respondents appear to be the firstline operations supervisors at many of the Combat Evaluation Group (CEVG) detachments. These incumbents spend 31 percent of their time performing operations functions, and typical tasks performed include preparing APRs, directing scoring of mission runs, and conducting daily crew briefings. NCOICs, Radar Maintenance perform the highest average number of tasks (106), and 34 percent are assigned to AFCC. These incumbents appear to be the middle level supervisors at various radar maintenance workcenters, and typical tasks include directing maintenance of facilities or work areas, determining OJT training requirements, or planning work assignments. NCOICs, Maintenance Control appear to be the middle level supervisors for the Job Control Personnel identified earlier. Representative tasks performed by these incumbents include maintaining status boards, graphs, or charts, supervising military personnel with AFSS other than 303X1, 303X2, or 303X3, or preparing APRs. Overall, these incumbents have the lowest job satisfaction indicators, with only 59 percent finding their job interesting and 53 percent perceiving their talents are being utilized at least fairly well. Radar Maintenance Superintendents spend almost 90 percent of their job time on supervisory duties. Seventy-one percent of these respondents hold DAFSC 30399, and these incumbents appear to be the upper level enlisted managers of the 303X1, 303X2, and 303X3 career ladders. Representative tasks performed by high percentages of these personnel include interpreting policies, directives, or procedures for subordinates, evaluating individuals for recognition, or indorsing APRs. Finally, Training Supervisors are differentiated by the large percentage of time spent (32 percent) performing training tasks. Many of these respondents are responsible for the OJT programs at various workcenters, and differentiating tasks include conducting OJT, selecting individuals for specialized training, or implementing training programs other than

OJT. Overall, these personnel are satisfied with their job, with 84 percent finding their job interesting and 69 percent planning to reenlist. (For more information about these job types see Tables VII, VIII, and IX.)

Quality Control Personnel

There are three job types identified within this cluster, all three of which are fairly similar to each other. Some differences can be found between these job types, and include the average number of tasks performed and the level at which these respondents conduct quality control programs. NCOICs, Quality Control seem to be the typical quality control personnel found at the workcenters. These incumbents spend 44 percent of their job time inspecting and evaluating and 21 percent of their time performing administrative functions. These incumbents perform the highest average number of tasks (73), some of which include performing equipment inspections, performing personnel proficiency evaluations, and preparing inspection reports. MAJCOM Quality Control Personnel are primarily working at various MAJCOM headquarters, and seem to be responsible for their respective headquarters quality control programs. Typical tasks performed by these more senior incumbents include reviewing correspondence or reports, analyzing trends in system malfunctions, and evaluating maintenance procedures. Somewhat unexpectedly, these incumbents have relatively low job satisfaction indicators, with only 45 percent finding their job interesting and 35 percent planning to reenlist. Quality Control Inspectors appear to be personnel who recently assumed a quality control type job. Consequently, their experience is temporarily limited, and these incumbents perform a very low average number of tasks (28). Most of the tasks performed by these personnel involve inspecting and evaluating, such as performing activity inspections, evaluating compliance with performance standards, and performing deficiency analysis. (For more information about these job types see Tables X, XI, and XII.)

TABLE I
RELATIVE PERCENT TIME SPENT ON DUTIES BY JOB TYPES IN THE ATR PERSONNEL CLUSTER

DUTIES	ATR IFF/SIF REFAIRKEN (GRP742, N=12)		RBS CREW MEMBERS (GRP636, N=54)		ATR IFF/SIF SUPERVISORS (GRP586, N=15)		SENIOR ATR PERSONNEL (GRP568, N=25)		AN/MPS-T1 INSTANTANEOUS MAINTENANCE (GRP681, N=21)		MOBILE INSTALLATION PERSONNEL (GRP635, N=23)		TAC ATR PERSONNEL (GRP82, N=12)		COMMUNI- CATIONS MAINTENANCE PERSONNEL (GRP469, N=10)		FIXED THREAT RADAR CREW MEMBERS (GRP307, N=15)		A-SCAN INDICATOR MEMBERS (GRP451, N=16)		B-SCAN INDICATOR MEMBERS (GRP428, N=22)	
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
ORGANIZING AND PLANNING	2	1	2	3	4	1	1	1	1	1	1	1	1	1	*	*	*	*	*	*	1	
DIRECTING AND IMPLEMENTING	2	1	1	3	3	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	2	
INSPECTING AND EVALUATING	2	1	1	3	3	2	3	2	2	2	3	2	3	2	1	1	1	1	1	1	2	
TRAINING	2	1	2	3	3	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	
PERFORMING ADMINISTRATIVE AND SUPPLY FUNCTIONS	2	3	4	6	6	3	3	3	3	5	5	6	6	5	3	3	3	3	3	3	7	
PERFORMING OPERATIONS FUNCTIONS	22	29	8	10	19	14	19	14	19	19	19	26	26	3	31	31	31	31	31	31	28	
PERFORMING SITE SUPPORT FUNCTIONS	2	2	1	3	2	4	4	3	4	3	4	2	2	2	3	3	3	3	3	3	5	
PERFORMING RADAR SYSTEM INSTALLATION AND REMOVAL FUNCTIONS	3	2	2	4	2	2	9	9	4	6	6	6	6	6	2	2	2	2	2	2	4	
PERFORMING GENERAL AND PREVENTIVE MAINTENANCE	25	18	21	17	26	26	26	26	20	20	24	34	34	24	24	24	24	24	24	24	27	
Maintaining Power and Distribution Equipment	3	3	3	3	3	4	4	5	3	3	2	6	6	6	4	4	4	4	4	4	4	
Maintaining Timing Systems	2	2	2	3	3	4	4	2	2	2	2	1	1	1	1	1	1	1	1	1	1	
Maintaining Transmitter Systems	7	6	10	11	15	9	7	7	7	7	7	4	4	4	17	17	17	17	17	17	4	
Maintaining Antenna Systems	6	6	8	8	5	8	8	8	5	8	8	6	6	6	5	5	5	5	5	5	4	
Maintaining Receiver Systems	5	5	6	7	6	7	6	7	6	7	6	2	2	2	3	3	3	3	3	3	2	
Maintaining Display Equipment	6	4	6	9	7	7	7	7	6	6	6	1	1	1	5	5	5	5	5	5	6	
Maintaining Remote Equipment	*	*	*	1	*	*	*	*	*	*	*	2	2	2	*	*	*	*	*	*	2	
Maintaining Ancillary Equipment	3	2	3	1	1	1	1	1	1	1	1	3	3	3	1	1	1	1	1	1	1	
Maintaining Identification Friend or FOE (IFF) and Selective Identification Feature (SIF) Equipment	8	*	8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Maintaining Range and Angle Tracking Systems	2	1	2	4	4	4	4	4	4	4	4	2	2	2	2	2	2	2	2	2	1	
Maintaining Computer Systems	3	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	

*DENOTES LESS THAN ONE PERCENT

TABLE II
BACKGROUND INFORMATION FOR JOB TYPES IN THE AIR PERSONNEL CLUSTER

TABLE III
**JOB SATISFACTION DATA FOR JOB TYPES IN THE ATR PERSONNEL CLUSTER
 (PERCENT MEMBERS RESPONDING)**

TABLE IV
RELATIVE PERCENT TIME SPENT ON DUTIES BY JOB TYPES IN THE
JOB CONTROL PERSONNEL CLUSTER

DUTIES	FIRSTLINE JOB CONTROLLERS (GRP579, N=13)	JOB CONTROLLERS (GRP454, N=14)	JUNIOR JOB CONTROLLERS (GRP348, N=32)
ORGANIZING AND PLANNING	8	19	7
DIRECTING AND IMPLEMENTING	13	16	2
INSPECTING AND EVALUATING	8	4	2
TRAINING	8	*	1
PERFORMING ADMINISTRATIVE AND SUPPLY FUNCTIONS	38	35	60
PERFORMING OPERATIONS FUNCTIONS	7	*	5
PERFORMING SITE SUPPORT FUNCTIONS	13	22	18
PERFORMING RADAR SYSTEM INSTALLATION AND REMOVAL FUNCTIONS	*	*	*
PERFORMING GENERAL AND PREVENTIVE MAINTENANCE	3	1	*
MAINTAINING POWER AND DISTRIBUTION EQUIPMENT	*	*	*
MAINTAINING TIMING SYSTEMS	*	*	*
MAINTAINING TRANSMITTER SYSTEMS	*	*	*
MAINTAINING ANTENNA SYSTEMS	*	*	*
MAINTAINING RECEIVER SYSTEMS	*	*	*
MAINTAINING DISPLAY EQUIPMENT	*	*	*
MAINTAINING REMOTE EQUIPMENT	*	*	*
MAINTAINING ANCILLARY EQUIPMENT	*	*	*
MAINTAINING IDENTIFICATION FRIEND OR FOE (IFF) AND SELECTIVE IDENTIFICATION FEATURE (SIF) EQUIPMENT	*	*	*
MAINTAINING RANGE AND ANGLE TRACKING SYSTEMS	*	*	*
MAINTAINING COMPUTER SYSTEMS	*	*	*

*DENOTES LESS THAN ONE PERCENT

TABLE V
BACKGROUND INFORMATION FOR JOB TYPES IN THE
JOB CONTROL PERSONNEL CLUSTER

	<u>FIRSTLINE JOB CONTROLLERS</u>	<u>JOB CONTROLLERS</u>	<u>JUNIOR JOB CONTROLLERS</u>
AVERAGE NUMBER OF TASKS PERFORMED:	28	18	8
JOB DIFFICULTY INDEX:	7.1	5.3	4.1
AVERAGE PAYGRADE:	E-5	E-4	E-4
PERCENT LOCATED IN CONUS:	62%	79%	81%
AVERAGE NUMBER OF PERSONS SUPERVISED:	2	-	-
<hr/>			
DAFSC:			
30331	-	-	-
30351	8%	28%	9%
30371	8%	-	6%
30332	-	-	-
30352	46%	14%	53%
30372	38%	21%	12%
30333	-	7%	-
30353	-	30%	20%
30373	-	-	-
30399	-	-	-
<hr/>			
MAJOR COMMAND:			
AFCC	27%	46%	22%
ATC	-	-	-
SAC	-	-	-
TAC	57%	54%	72%
USAFE	14%	-	-
PACAF	-	-	3%
AFSC	-	-	-
AAC	-	-	-
OTHER	2%	-	3%

TABLE VI

JOB SATISFACTION DATA FOR JOB TYPES IN THE
 JOB CONTROL PERSONNEL CLUSTER
 (PERCENT MEMBERS RESPONDING)

	<u>FIRSTLINE JOB CONTROLLERS</u>	<u>JOB CONTROLLERS</u>	<u>JUNIOR JOB CONTROLLERS</u>
<u>I FIND MY JOB:</u>			
NO RESPONSE	-	-	-
DULL	15	14	38
SO-SO	31	21	25
INTERESTING	54	65	37
<u>MY JOB UTILIZES MY TALENTS:</u>			
NO RESPONSE	-	-	-
NOT AT ALL TO VERY LITTLE	39	50	69
FAIRLY WELL OR BETTER	61	50	31
<u>MY JOB UTILIZES MY TRAINING:</u>			
NO RESPONSE	-	-	-
NOT AT ALL TO VERY LITTLE	62	71	84
FAIRLY WELL OR BETTER	38	19	16
<u>I PLAN TO REENLIST:</u>			
NO RESPONSE	-	-	-
NO, PLANNING TO RETIRE	16	14	6
NO OR PROBABLY NO	15	57	50
YES OR PROBABLY YES	69	29	44

TABLE VII

RELATIVE PERCENT TIME SPENT ON DUTIES BY JOB TYPES IN THE
RADAR MAINTENANCE SUPERVISORS CLUSTER

DUTIES	OPERATIONS/ ANALYSIS (GRP270, N=13)	NCOICs (GRP21, N=90)	NCOICs, RADAR MAINTENANCE (GRP 521, N=90)	NCOICs, MAINTENANCE CONTROL (GRP737, N=17)	RADAR MAINTENANCE SUPERINTENDENTS (GRP723, N=28)	TRAINING SUPERVISORS (GRP487, N=13)
ORGANIZING AND PLANNING	10	15	17	20	20	18
DIRECTING AND IMPLEMENTING	18	19	26	*	30	20
INSPECTING AND EVALUATING	13	24	21	*	34	19
TRAINING	13	10	12	5	5	32
PERFORMING ADMINISTRATIVE AND SUPPLY FUNCTIONS	6	22	18	*	*	8
PERFORMING OPERATIONS FUNCTIONS	31	1	*	3	1	*
PERFORMING SITE SUPPORT FUNCTIONS	3	3	4	*	1	*
PERFORMING RADAR SYSTEM INSTALLATION AND REMOVAL FUNCTIONS	2	2	*	*	*	*
PERFORMING GENERAL AND PREVENTIVE MAINTENANCE	*	*	*	*	*	*
MAINTAINING POWER AND DISTRIBUTION EQUIPMENT	*	*	*	*	*	*
MAINTAINING TIMING SYSTEMS	*	*	*	*	*	*
MAINTAINING TRANSMITTER SYSTEMS	*	*	*	*	*	*
MAINTAINING ANTENNA SYSTEMS	*	*	*	*	*	*
MAINTAINING RECEIVER SYSTEMS	*	*	*	*	*	*
MAINTAINING DISPLAY EQUIPMENT	*	*	*	*	*	*
MAINTAINING REMOTE EQUIPMENT	*	*	*	*	*	*
MAINTAINING ANCILLARY EQUIPMENT	*	*	*	*	*	*
MAINTAINING IDENTIFICATION FRIEND OR FOE (IFF) AND SELECTIVE IDENTIFICATION FEATURE (SIF) EQUIPMENT	*	*	*	*	*	*
MAINTAINING RANGE AND ANGLE TRACKING SYSTEMS	*	*	*	*	*	*
MAINTAINING COMPUTER SYSTEMS	*	*	*	*	*	*

*DENOTES LESS THAN ONE PERCENT

TABLE VIII

BACKGROUND INFORMATION FOR JOB TYPES IN THE
RADAR MAINTENANCE SUPERVISORS CLUSTER

	OPERATIONS / ANALYSIS NCOICs	NCOICs, RADAR MAINTENANCE	NCOICs, MAINTENANCE CONTROL	RADAR MAINTENANCE SUPERINTENDENTS	TRAINING SUPERVISORS
AVERAGE NUMBER OF TASKS PERFORMED:	70	106	55	53	57
JOB DIFFICULTY INDEX:	9.9	12.8	10.7	11.7	11.9
AVERAGE PAYGRADE:	E-5, E-6	E-6, E-7	E-6, E-7	E-7, E-8	E-6
PERCENT LOCATED IN CONUS:	69%	81%	82%	82%	92%
AVERAGE NUMBER OF PERSONS SUPERVISED:	4	5	4	4	6
DAFSC:	-	-	-	-	-
30331	-	-	-	-	-
30351	-	6%	6%	-	8%
30371	-	17%	6%	-	23%
30332	-	1%	-	-	-
30352	-	-	-	-	15%
30372	-	23%	53%	7%	8%
30333	-	-	-	-	-
30353	38%	4%	6%	-	8%
30373	62%	24%	11%	21%	31%
30399	-	25%	18%	18%	7%
MAJOR COMMAND:	-	-	-	-	-
AFCC	-	34%	29%	18%	23%
ATC	-	-	-	-	38%
SAC	92%	19%	6%	25%	15%
TAC	8%	38%	59%	43%	29%
USAFE	-	6%	6%	14%	-
PACAF	-	3%	-	-	-
AFSC	-	-	-	-	-
AAC	-	-	-	-	-
OTHER	-	-	-	-	-

TABLE IX

JOB SATISFACTION DATA FOR JOB TYPES IN THE
RADAR MAINTENANCE SUPERVISORS CLUSTER
(PERCENT MEMBERS RESPONDING)

	OPERATIONS/ ANALYSIS	NCOICs	NCOICs, RADAR MAINTENANCE	NCOICs, MAINTENANCE CONTROL	RADAR SUPERINTENDENTS	RADAR MAINTENANCE	TRAINING	SUPERVISORS
<u>I FIND MY JOB:</u>								
NO RESPONSE	-	-	-	-	-	-	-	-
DULL	8	13	35	4	18	8	8	8
SO-SO	8	18	6	7	7	8	8	8
INTERESTING	84	69	59	71	71	84	84	84
<u>MY JOB UTILIZES MY TALENTS:</u>								
NO RESPONSE	-	-	-	-	-	-	-	-
NOT AT ALL TO VERY LITTLE	15	27	47	4	25	8	23	8
FAIRLY WELL OR BETTER	85	73	53	71	71	92	77	92
<u>MY JOB UTILIZES MY TRAINING:</u>								
NO RESPONSE	-	-	-	-	-	-	-	-
NOT AT ALL TO VERY LITTLE	39	24	47	4	29	23	43	23
FAIRLY WELL OR BETTER	61	76	53	67	67	77	14	77
<u>I PLAN TO REENLIST:</u>								
NO RESPONSE	-	3	-	-	-	-	-	-
NO, PLANNING TO RETIRE	-	34	47	4	43	15	43	15
NO OR PROBABLY NO	23	11	12	12	14	16	14	16
YES OR PROBABLY YES	77	52	41	41	43	69	69	69

TABLE X
RELATIVE PERCENT TIME SPENT ON DUTIES BY JOB TYPES IN THE
QUALITY CONTROL PERSONNEL CLUSTER

DUTIES	NCOICs, QUALITY CONTROL (GRP768, N=62)	MAJCOM QC PERSONNEL (GRP814, N=20)	QC INSPECTORS (GRP715, N=27)
ORGANIZING AND PLANNING	11	17	5
DIRECTING AND IMPLEMENTING	11	12	6
INSPECTING AND EVALUATING	44	58	60
TRAINING	6	3	2
PERFORMING ADMINISTRATIVE AND SUPPLY FUNCTIONS	21	8	22
PERFORMING OPERATIONS FUNCTIONS	1	*	*
PERFORMING SITE SUPPORT FUNCTIONS	3	2	4
PERFORMING RADAR SYSTEM INSTALLATION AND REMOVAL FUNCTIONS	*	*	*
PERFORMING GENERAL AND PREVENTIVE MAINTENANCE	*	*	*
MAINTAINING POWER AND DISTRIBUTION EQUIPMENT	*	*	*
MAINTAINING TIMING SYSTEMS	*	*	*
MAINTAINING TRANSMITTER SYSTEMS	*	*	*
MAINTAINING ANTENNA SYSTEMS	*	*	*
MAINTAINING RECEIVER SYSTEMS	*	*	*
MAINTAINING DISPLAY EQUIPMENT	*	*	*
MAINTAINING REMOTE EQUIPMENT	*	*	*
MAINTAINING ANCILLARY EQUIPMENT	*	*	*
MAINTAINING IDENTIFICATION FRIEND OR FOE (IFF) AND SELECTIVE IDENTIFICATION FEATURE (SIF) EQUIPMENT	*	*	*
MAINTAINING RANGE AND ANGLE TRACKING SYSTEMS	*	*	*
MAINTAINING COMPUTER SYSTEMS	*	*	*

*DENOTES LESS THAN ONE PERCENT

TABLE XI
BACKGROUND INFORMATION FOR JOB TYPES IN THE
QUALITY CONTROL PERSONNEL CLUSTER

	<u>NCOICs, QUALITY CONTROL</u>	<u>MAJCOM QC PERSONNEL</u>	<u>QC INSPECTORS</u>
AVERAGE NUMBER OF TASKS PERFORMED:	73	50	28
JOB DIFFICULTY INDEX:	12.2	12.4	10.5
AVERAGE PAYGRADE:	E-6	E-7	E-6
PERCENT LOCATED IN CONUS:	71%	60%	89%
AVERAGE NUMBER OF PERSONS SUPERVISED:	1	1	-
<hr/>			
DAFSC:			
30331	-	-	-
30351	3%	-	-
30371	18%	35%	19%
30332	-	-	-
30352	5%	-	11%
30372	42%	25%	33%
30333	-	-	-
30353	3%	-	7%
30373	18%	10%	30%
30399	11%	30%	-
<hr/>			
MAJOR COMMAND:			
AFCC	24%	45%	19%
ATC	-	-	-
SAC	13%	-	21%
TAC	46%	20%	56%
USAFE	15%	10%	4%
PACAF	2%	-	-
AFSC	-	15%	-
AAC	-	5%	-
OTHER	-	5%	-

TABLE XII
JOB SATISFACTION DATA FOR JOB TYPES IN THE
QUALITY CONTROL PERSONNEL CLUSTER
(PERCENT MEMBERS RESPONDING)

	<u>NCOICs, QUALITY CONTROL</u>	<u>MAJCOM QC PERSONNEL</u>	<u>QC INSPECTORS</u>
<u>I FIND MY JOB:</u>			
NO RESPONSE	-	5	-
DULL	11	30	26
SO-SO	19	20	15
INTERESTING	70	45	59
<u>MY JOB UTILIZES MY TALENTS:</u>			
NO RESPONSE	-	-	-
NOT AT ALL TO VERY LITTLE	10	40	44
FAIRLY WELL OR BETTER	90	60	56
<u>MY JOB UTILIZES MY TRAINING:</u>			
NO RESPONSE	-	10	-
NOT AT ALL TO VERY LITTLE	13	30	52
FAIRLY WELL OR BETTER	87	60	48
<u>I PLAN TO REENLIST:</u>			
NO RESPONSE	-	-	-
NO, PLANNING TO RETIRE	37	45	44
NO OR PROBABLY NO	15	20	8
YES OR PROBABLY YES	48	35	48

APPENDIX B

TABLE I
REPRESENTATIVE TASKS PERFORMED BY ATR PERSONNEL

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING (N=273)</u>
REMOVE OR REPLACE FUSES OR FUSE HOLDERS	96
REMOVE OR REPLACE CAPACITORS	89
PERFORM PMIs ON TRANSMITTER EQUIPMENT	87
PERFORM PMIs ON ANTENNA EQUIPMENT	87
ADJUST POWER SUPPLIES OTHER THAN TRANSMITTER HIGH VOLTAGE POWER SUPPLIES	87
PERFORM SOLDERING ON WIRING TERMINALS OR CONNECTOR PLUGS	86
PERFORM GENERAL HOUSEKEEPING PROCEDURES	83
PERFORM CORROSION CONTROL ON ANTENNA PEDESTALS OR TOWERS	83
PERFORM PMIs ON RECEIVER EQUIPMENT	81
PERFORM TRANSMITTER RUNUP PROCEDURES	79
PERFORM CORROSION CONTROL ON EQUIPMENT VANS OR TRAILERS	79
ALIGN AUTOMATIC FREQUENCY CONTROL (AFC) CIRCUITS	75
DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES	75
LUBRICATE ANTENNA DRIVE SYSTEMS	74
PERFORM SYSTEM RUN DOWN PROCEDURES	73
PERFORM PMIs ON RANGE AND ANGLE TRACK EQUIPMENT	71
ADJUST TRANSMITTER HIGH VOLTAGE POWER SUPPLIES	71
REMOVE OR REPLACE CATHODE-RAY TUBES	71
INTERPRET PLANS, DIAGRAMS, OR SCHEMATICS	70
LEVEL ANTENNA PEDESTALS	70
PERFORM AUTOMATIC GAIN CONTROL CHECKS	69
REMOVE OR REPLACE ELECTRICAL MOTORS OR GENERATORS	69
PERFORM OPERATIONAL CHECKS OF AZIMUTH, ELEVATION, OR RANGE AUTOMATIC TRACKING CIRCUITS	68
PERFORM PMIs ON DISPLAY EQUIPMENT	66
PERFORM OPERATIONAL CHECKS OF TRANSMITTER	65
PERFORM AUTOMATIC FREQUENCY CONTROL CHECKS	63
BORESIGHT ANTENNAS	60
PERFORM AIRCRAFT AUTOMATIC TRACKING PROCEDURES	57
ALIGN ANTENNA SERVO DRIVE SYSTEMS	56
ALIGN RECEIVER LOCAL OSCILLATORS	53
ADJUST TRACK RANGE COMPUTERS	52

TABLE II
REPRESENTATIVE TASKS PERFORMED BY OPERATIONS CREW MEMBERS

TASKS	PERCENT MEMBERS PERFORMING (N=29)
RECORD BOMB AWAY TIMES	97
OPERATE PLOTTING BOARDS	97
MEASURE CIRCULAR ERRORS OR AZIMUTHS	90
MEASURE GROUND SPEED	90
MEASURE AIRCRAFT TRACKS	90
PERFORM OPERATIONAL CHECKS OF PLOTTING BOARDS	86
COMPUTE RBS MISSION SCORES	83
PERFORM PLOTTING BOARD SET UP PROCEDURES FOR RBS MISSIONS	83
MEASURE AUTORANGE OR AUTOANGLES	83
PERFORM RBS MISSION RUN SCORINGS	79
RECORD POSTRELEASE INFORMATION	79
ANNOTATE PLOTTING PAPER WITH RADAR BOMB SCORING (RBS) MISSION DATA	76
ENCODE RBS SCORES	76
PERFORM SYSTEM RUN DOWN PROCEDURES	76
PERFORM PLOTTING BOARD SET UP PROCEDURES FOR ECM MISSIONS	76
REPLOT RBS DATA	72
PERFORM AIRCRAFT AUTOMATIC TRACKING PROCEDURES	72
CONFIRM RBS SCORES	69
CONFIRM POSTRELEASE INFORMATION	69
ADVISE RADAR OPERATORS OR AIRCREWS OR RUN TERMINATIONS	69
COMPUTE BALLISTICS INFORMATION	66
CONFIRM ECM SCORES	66
IDENTIFY TRACKED AIRCRAFT	66
LOG RADAR CALIBRATION CHECKS	66
COMPUTE ECM MISSION SCORES	62
RELAY, CONFIRMED RBS PREMISSION RUN INFORMATION, SUCH AS TARGETS, IP, OR RUN TYPES	62
OPERATE MANUAL TRACKER RANGE CONTROLS	62
PERFORM ECM MISSION RUN SCORINGS	59
VERIFY AIRCRAFT POSITIVE IDENTIFICATION WITH OTHER RADARS	59
ANNOTATE PLOTTING PAPER WITH ELECTRONIC COUNTERMEASURE (ECM) MISSION DATA	59
PERFORM AIRCRAFT ACQUISITION PROCEDURES	59
PERFORM I BAND RADAR SEARCH OR LOCK-ON PROCEDURES	59

TABLE III
REPRESENTATIVE TASKS PERFORMED BY OPERATIONS MAINTENANCE PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=28)
REMOVE OR REPLACE FUSES OR FUSE HOLDERS	89
REMOVE OR REPLACE RESISTORS	89
RECORD BOMB AWAY TIMES	86
PERFORM PMIs ON COMPUTER EQUIPMENT	86
CONFIRM PBS SCORES	82
PERFORM PLOTTING BOARD SET UP PROCEDURES FOR RBS MISSIONS	82
PERFORM OPERATIONAL CHECKS OF PLOTTING BOARDS	79
MEASURE GROUND SPEED	79
PERFORM PMIs ON RECEIVER EQUIPMENT	79
REMOVE OR REPLACE CAPACITORS	79
PERFORM AREA BEAUTIFICATION	75
REMOVE OR REPLACE ELECTRONIC TUBES	75
PERFORM TRANSMITTER RUNUP PROCEDURES	75
PERFORM POWER SUPPLY OPERATIONAL CHECKS	75
PERFORM SOLDERING ON WIRING TERMINALS OR CONNECTOR PLUGS	75
RECORD POSTRELEASE INFORMATION	71
MEASURE AIRCRAFT TRACKS	71
PERFORM PMIs ON TRANSMITTER EQUIPMENT	71
OPERATE PLOTTING BOARDS	71
PERFORM SYSTEM RUN DOWN PROCEDURES	71
COMPUTE RBS MISSION SCORES	71
PERFORM PREOPERATIONAL AZIMUTH AND ELEVATION ANTENNA BALANCE CHECKS	71
PERFORM RBS MISSION RUN SCORINGS	68
PERFORM PMIs ON RANGE AND ANGLE TRACK EQUIPMENT	68
ADJUST POWER SUPPLIES OTHER THAN TRANSMITTER HIGH VOLTAGE POWER SUPPLIES	68
DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES	68
REMOVE OR REPLACE SWITCHES	68
REMOVE OR REPLACE RELAYS	68
MEASURE CIRCULAR ERRORS OR AZIMUTHS	64
CONFIRM ECM SCORES	64
PERFORM PMIs ON ANTENNA EQUIPMENT	64

TABLE IV
REPRESENTATIVE TASKS PERFORMED BY ATR OPERATORS

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING (N=11)</u>
OPERATE MANUAL TRACKER AZIMUTH OR ELEVATION CONTROLS	100
OPERATE MANUAL TRACKER RANGE CONTROLS	91
PERFORM GENERAL HOUSEKEEPING PROCEDURES	73
DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES	73
PERFORM PMIs ON ANTENNA EQUIPMENT	73
REMOVE OR REPLACE FUSES OR FUSE HOLDERS	73
PERFORM PMIs ON VANS OR TRAILERS	64
CLEAN OR REPLACE AIR OR MOISTURE FILTERS	64
ALIGN B SCAN INDICATORS	64
PERFORM AREA BEAUTIFICATION	55
PERFORM TRANSMITTER RUNUP PROCEDURES	55
PERFORM SOLDERING ON CIRCUIT BOARDS	55
REMOVE OR REPLACE RESISTORS	55
ADJUST POWER SUPPLIES OTHER THAN TRANSMITTER HIGH VOLTAGE POWER SUPPLIES	55
PERFORM POWER SUPPLY OPERATIONAL CHECKS	55
LOAD COMPUTER PROGRAMS	55
PERFORM AIRCRAFT AUTOMATIC TRACKING PROCEDURES	45
PREPARE MAINTENANCE DATA COLLECTION RECORD FORMS (AFTO FORM 349)	45
ALIGN POWER SUPPLIES OTHER THAN TRANSMITTER HIGH VOLTAGE POWER SUPPLIES	45
PERFORM SYSTEM RUN DOWN PROCEDURES	36
PERFORM OPERATOR MAINTENANCE ON VEHICLES	36
PERFORM I BAND RADAR SEARCH OR LOCK-ON PROCEDURES	36
PERFORM SOLDERING ON WIRING TERMINALS OR CONNECTOR PLUGS	36
CONVERT GRID SYSTEM DATA TO AZIMUTH AND RANGE DATA	36
MAINTAIN SUPPORT EQUIPMENT, SUCH AS MOTOR GENERATORS, GROUND HEATERS, OR AIR COMPRESSORS	27
REMOVE OR REPLACE SEMICONDUCTOR DEVICES	27
OPERATE RADAR TRAINING DEVICES	27
PERFORM TARGET SIMULATOR PROCEDURES FOR RADAR TRACKING OPERATOR TRAINING	27
TRANSFER TRACKING CONTROL OF AIRCRAFT TO MANUAL TRACKERS	27

TABLE V
REPRESENTATIVE TASKS PERFORMED BY JOB CONTROL PERSONNEL

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING (N=72)</u>
PREPARE JOB/STATUS DOCUMENT FORMS (AF FORM 264)	93
MAINTAIN STATUS BOARDS, GRAPHS, OR CHARTS	78
ISSUE JOB CONTROL NUMBERS	74
MAINTAIN EQUIPMENT STATUS REPORTS	68
DETERMINE WORK PRIORITIES	53
DOCUMENT EQUIPMENT CANNIBALIZATION	53
PREPARE BRIEFINGS	46
PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS	35
PREPARE APRS	31
PERFORM WORK AREA SECURITY INSPECTIONS	29
DISPATCH MAINTENANCE PERSONNEL	28
CONTROL REAL TIME EQUIPMENT OPERATIONS OR MAINTENANCE	25
PREPARE PUNCH CARD TRANSCRIPT FORMS (AF FORM 1530)	25
TYPE RECORDS, REPORTS, OR CORRESPONDENCE	25
CONDUCT OJT	25
COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED MATTERS	25
PREPARE JOINT MESSAGE FORMS (DD FORM 173)	24
UPDATE EQUIPMENT OPERATIONS OR MAINTENANCE SCHEDULES	24
MAINTAIN PREVENTIVE MAINTENANCE INSPECTIONS LISTINGS	22
DIRECT DEVELOPMENT OR MAINTENANCE OF STATUS BOARDS, GRAPHS, OR CHARTS	22
CONDUCT BRIEFINGS OTHER THAN CREW BRIEFINGS	22
ORIENT NEWLY ASSIGNED PERSONNEL	22
DIRECT MAINTENANCE OR UTILIZATION OF EQUIPMENT	19
CONDUCT CREW SHIFT CHANGEOVER BRIEFINGS	18
MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	18
DEVELOP EQUIPMENT OPERATIONS OR MAINTENANCE SCHEDULES	18
REVIEW CORRESPONDENCE OR REPORTS	18
INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	18
DIRECT MAINTENANCE OR FACILITIES OF WORK AREAS	17
DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES	17

TABLE VI
REPRESENTATIVE TASKS PERFORMED BY RADAR MAINTENANCE SUPERVISORS

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING (N=177)</u>
PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS	96
COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED MATTERS	95
ORIENT NEWLY ASSIGNED PERSONNEL	93
PREPARE APRs	90
INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	90
DETERMINE WORK PRIORITIES	88
REVIEW CORRESPONDENCE OR REPORTS	81
INDORSE AIRMN PERFORMANCE REPORTS (APR)	80
ASSIGN PERSONNEL TO DUTY POSITIONS	79
SCHEDULE TEMPORARY DUTY, LEAVES, OR PASSES	79
EVALUATE INDIVIDUALS FOR RECOGNITION	77
PREPARE REPLIES TO INSPECTION REPORTS	77
WRITE CORRESPONDENCE	76
PLAN WORK ASSIGNMENTS	76
ESTABLISH WORK SCHEDULES	73
DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT, OR SUPPLIES	73
PREPARE RECOMMENDATIONS FOR AWARDS OR DECORATIONS	71
MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	68
COUNSEL TRAINEES ON TRAINING PROGRESS	66
IMPLEMENT SELF-INSPECTION PROGRAMS	64
DETERMINE OJT TRAINING REQUIREMENTS	64
DIRECT MAINTENANCE OF FACILITIES OR WORK AREAS	62
PERFORM SELF-INSPECTIONS	60
CONDUCT BRIEFINGS OTHER THAN CREW BRIEFINGS	60
ASSIGN ON-THE-JOB TRAINING (OJT) TRAINERS	59
INITIATE PERSONNEL ACTION REQUEST	59
DEVELOP WORK METHODS OR PROCEDURES	58
EVALUATE INSPECTION REPORTS OR PROCEDURES	58
ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OI), OR STANDARD OPERATING PROCEDURES (SOP)	57

TABLE VII
REPRESENTATIVE TASKS PERFORMED BY QUALITY CONTROL PERSONNEL

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING (N=114)</u>
PERFORM EQUIPMENT INSPECTIONS	94
PREPARE INSPECTION REPORTS	90
EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	89
EVALUATE INSPECTION REPORTS OR PROCEDURES	85
EVALUATE MAINTENANCE PROCEDURES	84
PERFORM PERSONNEL PROFICIENCY EVALUATIONS	82
REVIEW CORRESPONDENCE OR REPORTS	82
EVALUATE CORROSION CONTROL PROGRAMS	82
PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORK SHOPS	82
EVALUATE TECHNICAL ORDER IMPROVEMENT REPORTS	79
PREPARE ROUTING AND REVIEW OF QUALITY CONTROL REPORTS FORMS (AF FORM 2419)	75
ANALYZE TRENDS IN SYSTEM MALFUNCTIONS	75
PREPARE QUALITY CONTROL INSPECTION SUMMARY FORMS (AF FORM 2420)	74
DEVELOP INSPECTION SCHEDULES	74
PERFORM DEFICIENCY ANALYSIS	73
EVALUATE MATERIAL DEFICIENCY REPORTS	71
ESTABLISH INSPECTION PROCEDURES	70
PERFORM SELF-INSPECTIONS	69
EVALUATE PERFORMANCE OF NEWLY INSTALLED EQUIPMENT	69
EVALUATE MAINTENANCE OF PUBLICATION LIBRARIES	68
IMPLEMENT QUALITY CONTROL STANDARDS	68
WRITE CORRESPONDENCE	67
PERFORM ACTIVITY INSPECTIONS	66
PERFORM ACCEPTANCE INSPECTIONS	65
PREPARE REPLIES TO INSPECTION REPORTS	63
MAINTAIN TECHNICAL ORDER FILES	56
PREPARE TECHNICAL ORDER SYSTEM PUBLICATION IMPROVEMENT REPORT AND REPLY FORMS (AFTO FORM 22)	56
CERTIFY STATUS OF REPARABLE, SERVICEABLE, OR CONDEMNED PARTS	56
EVALUATE MAINTENANCE DATA OR EQUIPMENT RECORD FORMS	56
TYPE RECORDS, REPORTS, OR CORRESPONDENCE	52
PERFORM FACILITY INSPECTIONS	51

TABLE VIII
REPRESENTATIVE TASKS PERFORMED BY ATR WORKCENTER SUPERVISORS

TASKS	PERCENT MEMBERS PERFORMING (N=11)
SUPERVISE APPRENTICE AUTOMATIC TRACKING RADAR SPECIALISTS (AFSC 30333)	100
SUPERVISE AUTOMATIC TRACKING RADAR SPECIALISTS (AFSC 30353)	100
PREPARE APRS	91
DETERMINE WORK PRIORITIES	91
PERFORM PMIS ON ANTENNA EQUIPMENT	91
REMOVE OR REPLACE RESISTORS	91
REMOVE OR REPLACE FUSES OR FUSE HOLDERS	91
CONDUCT OJT	82
PERFORM SOLDERING ON CIRCUIT BOARDS	82
PLAN WORK ASSIGNMENTS	82
ASSIGN ON-THE-JOB TRAINING (OJT) TRAINERS	82
COUNSEL TRAINEES ON TRAINING PROGRESS	82
INVENTORY SUPPLIES, EQUIPMENT, OR TOOLS	82
VERIFY PRIORITY MONITOR REPORTS (D-18)	82
ADJUST POWER SUPPLIES OTHER THAN TRANSMITTER HIGH VOLTAGE POWER SUPPLIES	82
REMOVE OR REPLACE RELAYS	82
DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES	73
PREPARE MAINTENANCE DATA COLLECTION RECORD FORMS (AFTO FORM 349)	73
PERFORM AREA BEAUTIFICATION	73
PREPARE SUPPLY ISSUE/TURN-IN REQUESTS FORMS (AF FORM 2005)	73
PERFORM WORK AREA SECURITY INSPECTIONS	73
EVALUATE INDIVIDUALS FOR RECOGNITION	73
PERFORM SOLDERING ON WIRING TERMINALS OR CONNECTOR PLUGS	73
PREPARE REPARABLE ITEM PROCESSING TAG FORMS (AFTO FORM 350)	73
REMOVE OR REPLACE SEMICONDUCTOR DEVICES	73
PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS	64
MAINTAIN DAILY DOCUMENT REGISTER AND ITEM SURVEILLANCE LISTS (D04)	64
EVALUATE OJT TRAINERS OR TRAINEES	64
PERFORM GENERAL HOUSEKEEPING PROCEDURES	64
PERFORM OPERATOR MAINTENANCE ON VEHICLES	64
PERFORM SYSTEM RUN DOWN PROCEDURES	64

TABLE IX
REPRESENTATIVE TASKS PERFORMED BY RESIDENT COURSE INSTRUCTORS

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING (N=52)</u>
PREPARE LESSON PLANS	100
SCORE TESTS	100
ADMINISTER TESTS	92
CONDUCT RESIDENT COURSE CLASSROOM TRAINING	90
COUNSEL TRAINEES ON TRAINING PROGRESS	79
WRITE TEST QUESTIONS	75
DEVELOP TRAINING AIDS	75
EVALUATE PROGRESS OF RESIDENT COURSE STUDENTS	71
CONDUCT SAFETY TRAINING	52
MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	52
COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED MATTERS	42
PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS	37
EVALUATE TRAINING METHODS OR TECHNIQUES	29
DETERMINE RESIDENT COURSE TRAINING REQUIREMENTS	29
PROCURE TRAINING AIDS, SPACE, OR EQUIPMENT	27
PREPARE TECHNICAL ORDER SYSTEM PUBLICATION IMPROVEMENT REPORT AND REPLY FORMS (AFTO FORM 22)	25
MAINTAIN STUDY REFERENCE FILES	21
MAINTAIN TECHNICAL ORDER FILES	19
PREPARE TRAINING REPORTS	19
INVENTORY SUPPLIES, EQUIPMENT, OR TOOLS	19
DEVELOP TRAINING COURSE OR CAREER DEVELOPMENT COURSE (CDC) CURRICULUM MATERIALS	17
CONDUCT SECURITY TRAINING	17
SELECT INDIVIDUALS FOR SPECIALIZED TRAINING	15
CONDUCT OJT	13
MAINTAIN ADMINISTRATIVE OR RECORDS FILES	13
EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	12
EVALUATE INDIVIDUALS FOR RECOGNITION	12
EVALUATE INSTRUCTOR PERFORMANCE	12
EVALUATE OJT TRAINERS OR TRAINEES	12
INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	12

TABLE X
REPRESENTATIVE TASKS PERFORMED BY OPERATIONS ANALYSTS

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING (N=10)</u>
MEASURE GROUND SPEED	100
MEASURE AIRCRAFT TRACKS	100
MEASURE AUTORANGE OR AUTOANGLES	100
MEASURE CIRCULAR ERRORS OR AZIMUTHS	90
ENCODE RBS SCORES	90
COMPUTE RBS MISSION SCORES	90
CONFIRM RBS SCORES	80
REPLOT RBS DATA	60
COMPUTE BALLISTICS INFORMATION	60
PERFORM RBS MISSION RUN SCORINGS	50
COMPILE MISSION RESULTS	40
RECORD POSTRELEASE INFORMATION	30
REPLOT ECM DATA	30
CONFIRM ECM SCORES	30
LOAD COMPUTER PROGRAMS	30
MEASURE EARTH CURVATURE CORRECTION	30
SCORE TESTS	30
CONFIRM POSTRELEASE INFORMATION	20
INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	20
DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES	20
ORIENT NEWLY ASSIGNED PERSONNEL	20
COMPUTE ECM MISSION SCORES	20
CONDUCT STAFF ASSISTANCE VISITS	20
WRITE TEST QUESTIONS	20
ADVISE COMMUNICATORS OF RESTRICTED BANDS	20
MAINTAIN CLASSIFIED DOCUMENTS	10
SCHEDULE TEMPORARY DUTY, LEAVES, OR PASSES	10
RECORD BOMB AWAY TIMES	10

**DAU
FILM**